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Mohamed Jamil Chaudri

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CHAPTER 6

SURVEY OF ORGANISATION PRACTICES WITH RESPECT TO THE DESIGN OF MANAGERIAL JOBS

Introduction

This chapter is a report on exploratory research conducted by the author in an attempt to:

1. (i) Establish the current status of organisational efforts in achieving the individual/organisation interface fit.
   (ii) Find out how the job evolves and assumes shape.
2. Delineate a set of constructs for measuring the quality of the design of the job.
3. Find out organisational practices with regard to processes and events which individually and cumulatively affect the individual's experience-in-job.

Chapter 3 discusses several events and processes on which either the design of the job has bearing, or which predetermine the design of the job. Figure 6.1 (a modified version of Figure 3.8) shows those processes and events about which research information was collected by the author.

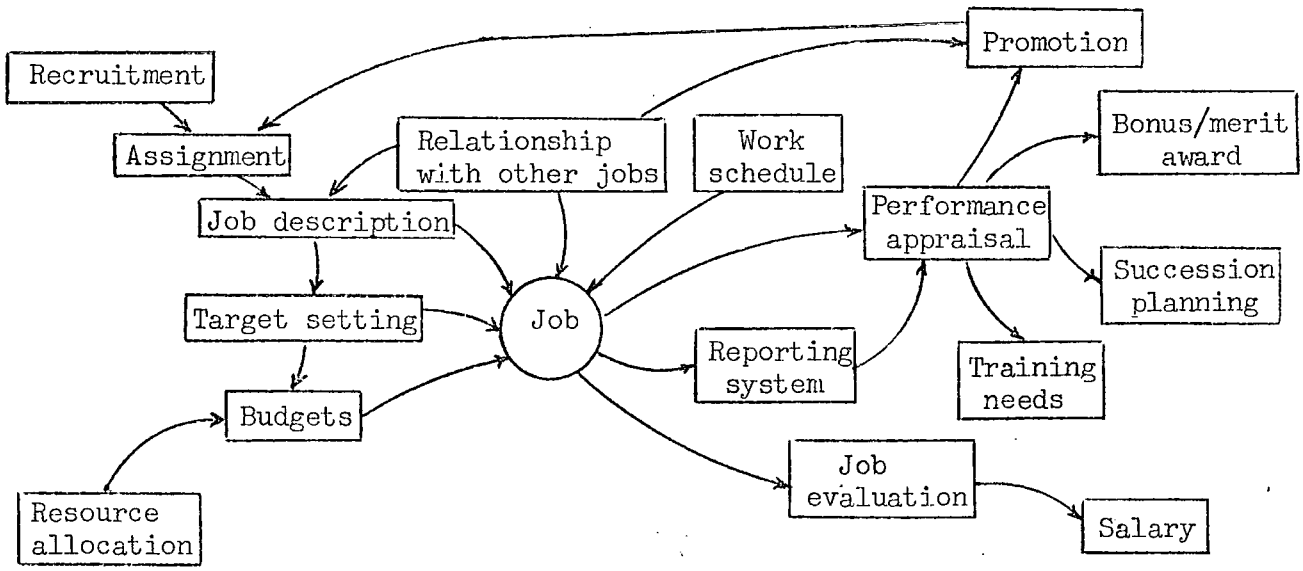


Figure 6.1. Organisational processes and events on which either the design of the job has a bearing or which predetermine the design of the job

In Figure 6.1, the managerial job is placed at the centre of these events and processes, and shows the interactions between these common organisational events and processes which stem from or are precursors to, the existence of a job. As the 'contents' of the job must have got there somehow - either through evolution or purposive action - there should be a link between the design of the job and the process of job evaluation. The link between the job and other organisational processes and events is a sufficiently important concept to merit consideration of a further example even at the risk of labouring the point.

Performance appraisal is the process of evaluating how well the assigned tasks have been performed. A person assigned the task of research chemist can be judged on how well and diligently he performs in research; the same person assigned to laboratory assistance duties can be judged only on how well he performs as a laboratory assistant. The performance of the same person can be judged with different frames of reference depending on the job to which he is assigned and thus, by inference, to the design of the job.

Note that the number of events and processes shown on the diagram are only a small set of all the possible variables within this class; the links shown between the events and processes are, in the like manner, only some of the potential links - links other than those shown are possible and plausible. Events and processes shown in the diagram are those which have been discussed in Chapter 3 and the links shown are those which will be discussed in this chapter.

The chapter consists of the following sections:

6.1. The organisation of the research instrument
6.2. Queries for which primary data was sought
6.3. Questionnaire development
6.4. Prospective respondent population
6.5. Conduct of study
6.6. Results and analysis of the survey data
6.7. Conclusions

6.1. The organisation of research instrument

It was decided to undertake the research using a questionnaire. The final version of the research instrument is presented in Appendix 6. The questionnaire contains a number of questions which oftentimes have sub-parts. Within this report references to the questions and parts thereof will be within parenthesis thus: (Q.18) or (Q.15a) or (Q.9.a.i.).

The data collected is of the following three types.

1. Explanatory data - Questions pertaining to this class are (Q.1 to Q.6) on the questionnaire.

Within this class there are two sub classes of data. The sub classes and items within the sub classes are:

(a) Organisational descriptor variables which are:

(i) Size of organisation
(ii) Business orientation of organisation
(iii) Ownership of organisation

(b) Respondent descriptor variables, which are:

(i) Length of service within organisation, of respondent
(ii) Hierarchical level of position held by respondent
(iii) Functional descriptor of the position held by respondent

2. Events and processes data - Questions pertaining to this class are (Q.7 to Q.19) on the questionnaire. Data was collected on the following events and processes:

1. Position descriptions
2. Performance appraisals
3. Job evaluation
4. Objective or targets setting
5. Control system
6. Manpower planning
7. Organised recruitment
8. Training programmes
9. Salary management
10. Succession planning
11. Policy regarding promotions from within
12. Job mobility facilitation
13. Work schedules

3. Job design data - Questions pertaining to this class are (Q.20 to Q.25) on the questionnaire.

The questions in this section relate to policy and practice of job design

within the organisation. The questionnaire design consideration of paramount importance was to collect data on job design from respondents holding positions in organisations where job design was undertaken purposively as well as from those who held positions in organisations where jobs evolved, or acquired shape through events and processes (see item 2 above).

Additionally, however clear the above classification may appear, as discussed in Chapter 3, items in class 2, i.e. events and processes, may directly act as determinants of the shape of the job and, therefore, would constitute job design data.

The data collected was intended to serve three purposes:

1. Give answers to certain queries that had formed in the author's mind as a consequence of readings, reported in Chapters 2-5. These queries are discussed in Section 6.2, with reference to questionnaire items).
2. Help the author to build theory on the measures on the quality of the design of a job. This aspect is discussed in Section 6.7 with reference to the questionnaire items.
3. Help define the future course of research - provide leads. This aspect is discussed in Section 6.7.

Reynolds (1975) in his doctoral thesis, on the authority of Selltiz, writes:

> "Open-ended questions are called for when the issue is complex, when the relevant dimensions are not known, or when the interest of research lies in the exploration of a process or of an individual's formulation of an issue".

The situation faced by the author, as suggested in the three points in the foregoing paragraph, was exactly the one which Reynolds suggests calls for open-ended questions. Most of the items in questions addressed at job design practices were open-ended. For the same reason a number of questions on the events and processes were also open-ended.

The author, in designing an open questionnaire and seeking primary data, was aware of possible difficulties of interpretation and classification that

can arise as a consequence of open-ended questions. But the exploratory nature of the survey, and the author's wish to collect data rich enough and multi-faceted enough to be helpful in theory building suggested the open-ended approach to be preferable to having a closed questionnaire.

6.2. Queries for which primary data was sought in the questionnaire

In Chapter 1 it was stated that the author found no references to managerial job design in the literature, the subject area of which is reported in Chapters 2 to 5. This section reports on the queries which had arisen in the author's mind and which the raw data collected in the survey was intended to help resolve.

While some queries are directly related to job design practices, others are related to the organisational practices (systems, events and processes) which either determine the shape of the job, or take the shape of the job as given; these practices determine the individual's experience-in-job, and are therefore of import to job design (see Chapter 3). The queries related to systems, events and processes were not resolved by the relevant literature because these entities have not been discussed in terms of their implication on job design - so acquisition of primary data towards the resolution of these queries, arising from literature perusal, was thought not only desirable but necessary.

As there are a number of queries to be discussed here, and in a later section data relating to these will be presented, it would be appropriate to number these queries. The referencing notation already adopted for the items on the questionnaire itself, explained earlier, uses the prefix 'Q' for 'question'; references to the queries will be prefixed with the letter P , e.g. P1, P2 .... PK.

These queries will now be discussed, starting with organisational practices in the area of managerial job design and then organisational practices with systems, events and processes impinging upon, or arising from the design of the job.

Note that hypotheses or propositions for testing were not set. The reason for this is that due to an absence in the literature of reports on the topic of managerial job design, and on aspects of organisational events related to job design, the situation did not call for testing contentions. Any hypothesis or propositions that might have been set up, would have been conjectural and based merely on guesswork. While literature consensus proposition may have been possible in some areas, in other areas, where the author himself had derived concepts linkable to job design, it would have been methodologically and logically incorrect to state these in the form of propositions.

6.2.1. Queries related to the practices in the area of managerial job design

On the basis of literature consensus, i.e. no report on managerial job design but many references to recruitment and placement, the first query was:

P1: To what extent do organisations attempt to design the jobs for their managerial level persons?

The query necessitates a clear cut distinction between the two paradigms - selection and design - of achieving the fit at the individual/organisation (I/O) interface. The following definitions were developed by the author.

The selection model for achieving I/O fit consists of, firstly, deriving a job specification through job analysis and, secondly, obtaining through selection an individual, from among other likely candidates, who would be best able to undertake the tasks, as defined in the specifications. The focus is on the choice of person.

The Job Design Model for achieving the I/O fit is in operation when the current set of incumbents (note that the set may consist of a single person) is taken and the jobs, or the work environment, modified in any (or all) of the following ways

- an increase (decrease) in the quality/quantity of the total work
- a redistribution/allocation of functions
- a change in any processes and events which form the outer determinants of the job and are sources of experience-in-job derived by the position incumbent

so that the same set, or a modified set, of position incumbents now undertake either the transformed units of work or work under the newly organised processes and events. The onus in job design is in modifications to jobs and systems which bound the job and determine the incumbents' experience-in-job.

Having defined the two processes under scrutiny, the discussions can be referred back to the query itself. It could be the case that the organisation as a whole, the corporate entity, has started managerial job design activity or it could be the case that while the corporate entity is not involved in designing jobs for their managerial staff, the unit of which the respondent is a member does attempt to design the managerial jobs.

From Brech (1960), W. Brown (1971) and Newman and Rowbottom (1973), when something is held to be of import, organisations issue policy statements on it.

An example of policy statement, from the field of financial control, would be the directive from corporate headquarters on the adaptation of some index, e.g. return on investment, as a conceptual framework for decision making with respect to new projects; sub unit managers are then expected to work within the suggested acceptability bounds or limits when submitting or accepting new projects. Another example, this time from job evaluation, a topic more related to job design, is that organisations invariably attempt to ensure that jobs essentially the same in nature, although in different sub units, get the same evaluation. This can only be achieved through adaptation of company wide policies. The query regarding whether the corporate body was involved in job design was to be tested with data from (Q.23.c). Data indicating corporate policy on job design would be classified as 'Corporate Job Design'.

The existence of a Corporate Job Design policy, important as it is, does not of itself indicate that units within the organisation would be designing jobs. Equally, the absence of a Corporate Job Design policy would not, of itself, prevent heads of operating units from initiating their own job design policies. The class of organisations where corporate policy does not exist but units do follow some policy on job design are labelled 'Unit Design Policy'.

However, given that the respondents to the study are themselves managerial employees, it can be the case that the responding individual was himself attempting to design the jobs of his subordinates (and perhaps others), in pursuance of some policy which is best known to himself (and those responsible for designing). So, within this class of Unit Design Policy two patterns were potentially possible:

1. An individual manager (or a small group of like minded individuals) attempt to design jobs within their influence; but those whose jobs are the targets of design effort do not know of the policy being pursued.
2. Same as above except that the individuals whose jobs are the targets of design effort are informed of the policy.

In Part 1 of the thesis it has been suggested that essentially any actions of one manager which impinge on the jobs of others could be regarded as an effort to modify the design of the latter set of jobs. The first of the above two items could, therefore, be regarded as an esoteric approach to the conduct

of job design. Only cases reporting the presence of a job design policy at the level of the unit together with the policy pursued being known to position incumbents whose jobs were the target of design effort, were to be classed as having a Unit Design Policy .

The query regarding Unit Design Policy was therefore a compound test, to be resolved with data from (Q.23.aa) and (Q.23.a).

Regarding the practice (as opposed to policy), the query was to be resolved with the data collected from (Q.21). Questionnaire item 21 has been posited as a two dimensional item: function to which job design is applied and the time over which job design has been used. For the query here, the data on the time dimension was to be ignored; time discussion analysis is to be presented later. Subsidiary queries within this main query were set as follows:

Reading in job design literature had revealed that a large proportion, but not all, of job design application reports originate from operator level jobs in production type of organisations. This led to the formulation of two sub-queries related to aspects of prevalency. The first of these sub-queries was:

Pl.1: In organisations that attempt to design the managerial job:

(i) Is job design attempted with respect to specific functions, e.g. production.

(ii) When it is applied to more than one function, do organisations initiate job design in some specific function, as above, and subsequently apply job design to other functions?

The thinking which led the author to formulate this sub-query was:

1. Production type of organisation having applied job design to operator level jobs would have gained considerable experience which they subsequently may extend to the managerial jobs.
2. Production type of organisations may be facing problems specific to themselves. The problems faced may be more, or less, acute at the operator level jobs but may persist at the managerial level jobs. Moreover, the solution to operator level jobs may demand modifications to managerial jobs.

The second part of the query has to do with the time element. From literature consensus it could be surmised that organisations having a multiplicity of

functions, including production and production type, would be more likely to start job design in the production type of units. It would then follow that in organisations designing jobs in more than one functional unit, job design may have started at different times.

The query was to be resolved with data from (Q.23) and (Q.21).

The second sub-query in prevalency was related to hierarchical level of job design application:

Pl.2: In organisations using job design at managerial level,

(i) Where it is selectively used at some levels of the organisation, and not at others, is it more likely to be used at the lower levels, than the middle and upper levels of the hierarchy?

(ii) Where it is used at different hierarchical levels, is it likely to be the case that it will have been applied at the lower levels for a longer period of time than at senior levels?

The two facets of the above proposition on prevalency are based upon the author's concepts related to, and stemming from:

1. Ripple effect - As jobs at the bottom, say, operator level jobs, are re-designed, jobs at levels immediately above these levels are eroded, (see Chapter 5); job design at one level therefore necessitates the design of jobs at the level above it. This should then result in a ripple effect, where managerial jobs at the lower end of the hierarchy are both more likely to have been the object of redesign, and more likely to have been the object of redesign effort for a longer period, than jobs at the upper level of the hierarchy.

2. Annual intake - Organisations having annual intake of potential managerial people would have to structure the jobs for their recruits so as to facilitate the acquisition of experience in a relatively short time; the process of structuring these jobs at the lower end of the hierarchy would lead to greater understanding and skills at structuring those jobs immediately above these. The effect of this process of structuring at one level leading to improved understanding of jobs at levels immediately

above the level being re-designed, could then result in the phenomenon the query is attempting to elucidate.

This query would be tested with data from (Q.23) and (Q.20).

Review is an important concept in control theory (see Tocher (1970), (1976)). Changes in organisational circumstances due both to internal and external circumstances (see Chapter 4), and the learning from past experience (for Heuristic learning, see Polya (1945)), respectively indicate the desirability and usefulness of reviewing practices, procedures and policies for ongoing activity within an organisation. Further, job design is a relatively new concept and is under constant and rapid theoretical development.

Given these circumstances, it would be expected that organisations would have to perform periodic reviews of their job design policies. The query regarding review was:

P.13: Do organisations which attempt to design managerial jobs review the job design policies?, and if so how often is the review conducted?

The query was to be resolved with data from (Q.23.f) and (Q.23.g).

Review would be of benefit only if the practices and policies earlier contrived have been applied for some time, i.e. when sufficient experience has accumulated. This aspect was to be tested with cross reference to (Q.20).

The next subsidiary query in the author's mind was with regard to the process by which organisations, and units within organisations, build up and adopt the conceptual framework for designing managerial jobs. Within the process, attention was specific to the participants to devising the policy and strategy which controlled the Job Design effort.

Distinguishing between the process of devising the policy and strategy, and the act of designing jobs, itself, currently held opinion favours employee participation in job design (see Chapter 5).

The process of policy formulation is, of course, a level above the act of designing itself. Organisational processes which take the design of the job as given, e.g. job evaluation, do often rely on employee participation in both policy formulation and implementation (see Chapter 3). Job design being

of the same genre as job evaluation an inferential expectation would be that some kind of employee participation might be involved. On the other hand, a large proportion of job design implementations have had consultant involvement; moreover, consultants are often involved in devising job evaluation schemes. The query on the formation of policy and strategy for managerial job design was:

Pl.4: What type of persons, or groups of persons, would be involved in framing the conceptual framework for managerial job design.

The resolution of this query was sought with data from (Q.23.b).

In discussing contingency approaches to job design (Chapter 5), and in the discussions on cross cultural differences (Chapter 4), it was stated that policy statements on job design might have to be a high level of abstraction, so that unit heads could operationalise the policy statements to suit their own particular and immediate needs and circumstances. The query with regard to organisational practices was:

Pl.5: Would organisations permit unit heads to operationalise the job design framework to suit their particular circumstances?

The resolution of this query was sought with data from (Q.23.d).

However, the need for discretion is likely to arise in heterogenous large organisations rather than those which are homogeneous. The expectation therefore would be that operationalisation by unit heads would be permitted in larger organisations than in smaller ones. This could be tested with data from (Q.23.d) and Q.1).

In Chapter 5 was discussed the concept of responsibility for the design of a job. The concept of an Ombudsman was also discussed, as well as the industrial engineering approach in which the boss is nominally responsible for the design of the job but the industrial engineer in fact performs the actual operation on behalf of the boss.

The query related to the concept of responsibility was:

Pl.6(i): Do organisations, designing jobs for their managerial staff, assign to individuals or groups of individuals, the responsibility of ensuring that the jobs get designed according to policy.

(ii) And if responsibility is thus assigned, in whom does it reside?

The query was to be resolved with data from (Q.23.b) and (Q.23.i).

The purpose of management training and development being to maintain and enhance organisational performance through increase in individual awareness and knowledge (see Taylor and Lippitt (1975)) and given that job design is a relatively new concept, it was thought an obvious thing to check was whether those individuals or groups whose task it was to perform and undertake the actual process of design, did in fact receive some training in this area. Regarding training, the query was:

Pl.7: Do organisations that initiate managerial job design ensure specialist training for those who are held responsible for designing the jobs of others.

This query could be resolved by data from (Q.24.c).

The importance of a function within organisations is often reflected in the assignment of personnel exclusively to that activity (see Chapter 4). These specialists could be asked themselves to undertake the task on an ongoing basis; help train others to do the job; or act as fire-fighters. In the above three, or possibly other ways, a "job designer" specialist role would be called for. The query regarding the job designer role was:

Pl.8: Do organisations involved in managerial job design appoint job designers?

This query oould be resolved by data from (Q.24.b).

The process of job design calls for the collection of several types of information, e.g. on organisational performance, individual abilities, individual personality, etc. (see Chapters 2-5). In application, the standpoints on information gathering of the various theories of job design discussed in Chapter 5 could be classified (see Chapter 5) as:

1. Taylor - job designer observation
2. Work psychologists - experimentation
3. Herzberg - no information necessary
4. Hackman and Oldham - questionnaire
5. Tavistock - interviews

The author was interested in finding out the methods used in industry for the specific purpose of managerial job design. The specific query on gathering of information was:

Pl.9: How do organisations collect information for designing managerial jobs?

The question of how information is collected, i.e. the method, is important from the perspective of cost effectiveness. The different methods may have different overhead costs associated with them. As managerial personnel are mobile (see Chapter 4), organisations involved in managerial job design may have developed methods which are more cost effective than others. Further, the different types of information collected may lend themselves to collection by different methods.

This query could be resolved by data from (Q.24.d.).

Information could be classified along a continuum from quasi-permanent to transient. Given that there would always be some overhead cost associated with collection of information, it was thought logical that organisations may attempt to find methods of storing information, once collected, in ways that would make it both readily available and change amenable, at the same time. Ready and low cost availability is necessary because changes, both inside and outside the organisation, would necessitate updating. On the other hand, storage would be necessary, for the absence of it would necessitate the collection and re-collection of the same information and would thus be wasteful of resources.

In Chapter 1 was discussed the possibilities that the advent of computers has brought; in Chapter 4 was discussed management information systems; the query in the author's mind was whether organisations have devised and adopted information systems which facilitate job design. The specific query on information handling was:

Pl.10: What kind of information storage systems and methods do organisations involved in managerial job design use?

This query could be resolved by data from (Q.24.e).

Theory Building Data

Some of the queries regarding organisational effort at achieving the individual/organisation interface fit related to the author's wish to build a substantive theory of job design: the Measures on the Quality of the Design of a Job. Additionally, and just as important as the delineation of parameters for the quality of design concept, was the author's concern to gather data on the salient characteristics of the process of job design. Specific queries directed to generate primary data for these purposes will now be discussed.

The reasons given for adopting job design and the gains accruing as a consequence of adopting job design were discussed in Chapter 1; but the discussion there was in terms of operator level and clerical jobs. As the author was directing his efforts at managerial jobs, the query was:

P2.1: To what purposes, or for what reasons, do organisations design managerial jobs?

The query was to be resolved with data from (Q.22).

A specific purpose can be achieved in many different ways. To give query P2.1 an alternative formulation as well as to find out the specific way adopted by the organisation in its managerial job design endeavour, the query could be formalised as:

P2.2: What are the underlying philosophies of the job design effort in organisations involved in managerial job design?

This query was to be resolved with data from (Q.23.e).

More recent theories of job design have been based on, and job design research has devoted considerable effort in delineating, job and individual characteristics, a match which (between the incumbent and the job) is considered important. These characteristics that have been incorporated into job design theories have been tested in the confines of operator level and clerical work. The query in the author's mind was:

P2.3: What job and personal characteristics are matched in organisational efforts to achieve the managerial I/O interface fit?

This query was to be resolved with data from (Q.25.a) and (Q.25.b).

It is possible to envisage problems arising in the process of designing jobs in accordance with specific, and essentially pre-conceived, policies. These problems would act as barriers or constraints on the implementation of policies. It was, therefore, thought desirable to find out these constraints to policy or implementation. The specific query was:

P2.4: What kind of problems would be faced by organisations attempting managerial job design?

The query was to be resolved by data from (Q.25.c).

Another process query was related to the extent different individuals, e.g. the job holder himself, his role-set, specialist groups within the organisation and perhaps even external individuals, influence the process of designing specific jobs. The specific query with regard to influence was:

P2.5: Who are the 'others' who influence the design of specific managerial jobs and how much influence do they exercise in the design process?

Note that the purpose of collecting data on this query was not the formulation of a normative theory on the extent of influence desirable; rather, this information was sought for the sake of delineating parameters for the job design methodology to be developed in the course of the thesis research.

The query was to be resolved with primary data from (Q.24.a).

The resolution of this query was further to be facilitated by primary data from the query on the extent to which managerial level employees develop their own job descriptions (Q.7.d); the extent to which others are involved in this development (Q.7.c); and the variables used for job evaluation (Q.9.f).

In the main, queries associated with these items from the questionnaire will be discussed in Section 6.2.2.

Lastly, the author was wondering on the extent to which organisations that claimed to be designing jobs, in fact also checked on establishment variables (processes, events, systems and procedures), while attempting to design jobs. These, as suggested in the introduction to this chapter, are the outer bounds of the job and determine the individual's performance and experience-in-job. The query regarding establishment variables was:

P2.6: When organisations attempt managerial job design, what establishment variables are checked to ensure their colinearity with the needs of the job?

This query was to be resolved with primary data from (Q.25.d).

Co-relationships of query variables with explanatory variables

In questionnaire design it was envisaged that the important data generated from query responses would be cross-tabulated for possible relationships with the explanatory variables; discovery of possible co-relationships of the explanatory variables with the job design query variables (as well as with the organisational events variables) was the reason for collecting data on the explanatory variables. Nonetheless, as most of the items in the job design query variables were open ended, and the fact this would necessitate classification prior to attempts at correlational investigation being expected, it was part of the study plan to conduct correlational work on only those variables which produced results of outstanding interest in responses to the primary queries.

6.2.2. Queries related to organisational practices in the area of organisational events and processes

The four reasons for collecting data on these variables were:

1. To explore the differences in these variables between organisations involved in managerial job design and those not so involved.
2. Although some data on the variables is available from past surveys (see Chapter 3), the available data is essentially of historical vintage and may have no current validity.
3. Facets of these variables impinging on the design of jobs have not been reported. The survey was intended to provide this linkage-to-job-design primary data.
4. To create a total immersion situation, for the author, where variables held to be precursors to, or stemming from, job design could be studied.

The queries based on organisational systems, processes and events will now be presented.

Note that responses to these queries were also to be analysed across categories of explanatory data to find out whether there were any specific patterns in the responses received.

Queries on job descriptions

The discussions on job descriptions in Chapter 2 indicated that literature views on the value of job descriptions are ambivalent - while some authors regard job descriptions as something helpful others regard them as 'straight-jackets' which stifle initiative.

A strong recommendation for job descriptions would be their facilitating value - they should help newly appointed position incumbents to know of their jobs 'ab-initio' and 'in-toto'. Moreover, there is now UK legislation which stipulates that every job holder, at operator level, should have a job description. Although, as yet, for managerial positions job descriptions are not mandatory, the prime query on job descriptions was based on the concept of prevalency:

P3: What proportion of organisations provide job descriptions for their managerial staff?

The query was to be resolved with data from (Q.7.aa).

The discussions on the nature of managerial job (Chapter 3) had indicated that jobs become more and more conceptual, i.e. less tangible, as the analytic framework moves upwards, starting from the base. A query associated with the methodological difficulties that could arise in the preparation of descriptions for the more abstract jobs (and therefore jobs at hierarchical higher levels) was:

P3.1: In organisations providing job descriptions for their managerial staff, are such descriptions provided for all levels of managerial staff or only for some?

One of the major strands of the author's thinking, and research based on this thinking, has been the concept of 'wholeness' of any managerial job - both conceptually and to the job holder for whom the job is a central whole . The conceptual link is obviously to systems theory within which the concept of

wholeness has a cornerstone value, and the practical link is equally obviously with job ownership. In Chapter 5 was discussed the system analytic concept of the whole job as being composed of three elements: inputs, throughputs and outputs; in Chapter 3 was discussed the association of the concepts of quality, quantity and timing to managerial activity. These last-mentioned three concepts could be regarded as measures on the input and output elements of the job. These, along with the availability of resources, were deductively regarded by the author, as important elements that should be discernable in a job description. The query was directed at ascertaining whether current job descriptions dealt equally thoroughly with inputs, process and outputs. A job description can only be fully (or wholly!) useful if it includes all three elements. Moreover, also of research interest was whether current job descriptions used additionally, or exclusively, other dimensions of analysis.

P3.2: What are the key components of the managerial job description issued in industry?

The query was to be resolved with data from (Q.7.b) and (Q.7.c).

In Chapter 3 was discussed the concepts of incumbent developing or operationalising his own job description. The query related to the extent to which the incumbents at different levels of the hierarchy were involved in doing this. A statement of this query would be:

P3.3: To what degree do incumbents of managerial positions at different levels of the hierarchy operationalise their own jobs.

Note that the query requires a measure, and this was catered for by providing a 9 point scale ranging from limited self development to complete self development.

Note also that this query is important from the job redesign process viewpoint. Some of the criticism of job descriptions, presented in Chapter 3, referred to their 'snapshot at specific moment in time' nature. The argument germane to the perspective is that while the needs of the job and job incumbent change, the description remains static. The development of a wholistic theory of job design would call for the implementation of procedures for job descriptions to be flexible yet detailed enough to permit the description to move

along with changes in the job environment - both external and internal to the organisation. Information generated from the query on operationalisation discussed here, and the query on participants which is the subject of the next discussion are both important to the process and procedures of job redesign and are more fully discussed in Chapter 8.

The query was to be resolved with data from (Q.7.d).

In Chapter 3 was discussed the concept of managerial jobs being 'colleague dependent'. Further, drawing also from the material presented in Chapter 3, it is conceivable that for managerial personnel having direct subordinates, their own effectiveness would be dependent on the performance of their subordinates. These two, and perhaps other, sets of individuals could, therefore, be regarded as influencing the development of the job description for most incumbents of managerial positions. The query regarding participation in the development of job descriptions was:

P3.4: For the various levels of the hierarchy, which section of the role-sets are involved in the development of the job description?

The query was to be resolved with data from (Q.7.e).

Queries on performance appraisals

Although recently substantial and substantive information on performance appraisal has been reported in literature (see Chapter 3), nonetheless some aspects of the way performance is evaluated, specifically those aspects that impinge on the design of the job have not been addressed, at least with the rigour that they deserve. The author therefore attempted to elicit aspects of the missing information while at the same time addressing some more traditional areas to draw out information on current practices, within his sample.

The main query on performance appraisal was:

P4: What proportion of respondents in the survey report their organisations to be engaged in appraising the performance of their managerial personnel?

The query was to be resolved with data from (Q.8.aa).

In Chapters 3 and 4 an argument was presented for viewing the managerial job as being concerned with fulfilling the input needs of the role-set. From

this perspective, this latter set of individuals, the role-set, would be expected to have something useful to contribute to appraising the individual's performance. The specific query was:

P4.1: What is the status with regard to role-set participation in appraising the managerial performance?

The query was to be resolved with data from (Q.8.b).

During the last 15 years or so management development and training (for references see Chapters 3 and 4), has blossomed into specialist activities. The high growth in these activities can be taken as indicators of the corporate wish to improve performance. Cummings and Schwab (1978) discuss two types of appraisal conduct: evaluative and developmental. They opine that, while historically emphasis was an evaluative type of appraisal, developmental considerations are likely to offer more advantages. Also, these researchers suggest that orientation towards the developmental perspective to be gaining acceptance. The query related to the developmental perspective was:

P4.2: Do organisations attempt to evaluate training needs, at the time of appraising managerial performance?

The query was to be resolved with data from (Q.8.d).

Looking at appraisal from the evaluative perspective, i.e. from the viewpoint of how the organisation measures the individual's behaviour, the occasion could be regarded as appropriate for the review of the designing of the job itself. The query on appraising the design of a job was:

P4.3: Do organisations attempt to evaluate the design of a job, when appraising performance?

The query was to be resolved with data from (Q.8.b).

The periodicity with which the performance of appraisal is conducted could be regarded as having a link to the process of redesign of jobs. This will be more fully discussed in Chapter 8, but the query on which data was collected in the survey was:

P4.4: How often is performance appraisal conducted?

This query was to be resolved with data from (Q.8.c).

Queries on Job Evaluation

Evaluation of jobs is mostly undertaken for the purpose of salary assignment (see Chapter 3). Given that a wholistic perspective of jobs would regard the outcomes of job - and salary is an outcome of jobs (see Chapters 2 and 5) - as an important variable of job design and further that job evaluation leads to salary determination, with the specific purpose of ensuring that the job content be translated into equitable salary, job evaluation could be regarded as an input process determining the individual's experience-in-job.

Further, those individuals interested in the extrinsic outcomes of the job, e.g. salary, could be expected to be interested in seeing their jobs well loaded and favourably evaluated on those dimensions that the organisation uses for job evaluation.

The high level query on job evaluation was concerned with the prevalency of job evaluations. The query was:

P5: What proportion of sampled organisations Evaluate Managerial Jobs?

The query was to be resolved with data from (Q.9.aa).

There is a dearth of empirical data on organisational or personal events that lead to, i.e. the mechanics that trigger off, job re-evaluation. The query on re-evaluation triggers was:

P5.1: What events and which persons are involved in triggering job re-evaluations on managerial jobs?

The query was to be resolved with data from (Q.9.a).

In Chapter 3 is presented a critique on job descriptions by Britton ((1974), (1975)) which is based on attempts to use job descriptions for salary determination purposes. The author attempted these to refute the critique on theoretical grounds, invoking the argument that the intent of job descriptions does not envisage their direct use in salary determination. However, it had remained a query in the author's mind as to whether organisations might be attempting to make such a direct use of job descriptions. The query was:

P5.2: Do organisations assign job grades, for managerial jobs, straight from job descriptions?

The query was to be resolved with data from (Q.9.b.).

For managerial jobs, the literature on the nature of managerial jobs (Chapter 3) and the concepts of effectiveness discussed in Chapter 4, had lead the author to believe that the assignment of job grade may call for interviews with the job incumbent and his role-set. As to whether this happens in organisational practice, was regarded as a query:

P5.3: Are the job holders consulted and role-set asked to provide information for the purpose of assigning grades to managerial jobs, in job evaluation schemes?

The query was to be resolved with data from (Q.9.c) and (Q.9.d).

The author in the course of his own job-related work had learned that some organisations have job bands - for example, in ICI the job bands, in the parlance peculiar to the company, are referred to as the Green Book, Blue Book, Black Book and White Book. The author had been led to believe that more than one method was employed in evaluating the jobs at different bands. However, as no discussion on the subject of different job evaluation schema within the same organisation was found in relevant literature, the basic query in the author's mind was:

P5.4: Do organisations use different job evaluation schemes for measuring managerial jobs at different levels?

The query was to be resolved with data from (Q.9.e).

Job Evaluation Schemes (see Bowey (1974), Bowey and Lupton (1975)) could be viewed as attempts to find positive and negative aspects of the job so that the individual gets compensated as much for 'putting up with the job' as contributing his personal resources. Payments made under such headings as 'danger money', 'unsocial hours', 'away from home' and 'abnormal heat and light conditions' are essentially based on compensation for negative characteristics of jobs. From the theory building aspect of the survey, the author was interested in finding out the negative aspects of managerial work being recognised as compensatable and therefore worthy of inclusion in the Wholistic Theory of Managerial Job Design.

The positive characteristics of work were sought, because these would be of the type in terms of which, following the Herzbergian tradition, the job holders themselves could be expected to seek, and job designers expected to contrive, increased loading.

The query related to job evaluation dimension was then:

P5.5: What job elements do organisations regard as worthy of compensation?

The query was to be resolved with data from (Q9.f).

Queries based on Objective Setting

The difference between, on the one hand, the process of objective setting and, on the other hand, the processes of job description, and performance appraisal, as well as the connection between them was explained and is recorded in Chapter 3.

The relevant literature on objective setting had indicated the obvious - the process results in giving shape to the job and channelling job incumbent efforts. The high level query on objective/target setting was then:

P6: To what extent do organisations undertake objective setting for managerial positions?

The query was to be resolved with data from (Q.10.aa).

Organisational processes like MBO, assume a vertical direction - whether upwards or downwards - in implementation (see Chapter 3). From the 'reality of management' literature, the author discerned that in most managerial positions the outputs from individual jobs are passed on as inputs to other jobs at the same hierarchical level. The author formed the opinion that a wholistic theory of managerial job design should entail, in its implementation procedures, the involvement of the job holder's colleagues in the objective setting phase. The reason for the author's opinion is essentially that the vertical downward setting of objectives process has the potential for eroding the contents of the junior positions. Consider a specific manager at any level. Once his objectives/targets have been set, he could simply transfer any of those aspects of his work that he does not like, onto his own subordinates. Therefore, it was envisaged that procedures for designing managerial jobs according to the wholistic theory should be based upon (in the opinion of the

author) participation of the role-set who are the recipients, or providers, of the focal manager's outputs and inputs respectively.

This topic, linked to procedures as it is, is discussed more fully in Chapter 8. For the moment, focussing on the process of objective setting as it obtains in industry, the author wanted to find out whether the 'apprentice model' - one person determining what the other should do - was still being pursued or whether industry had evolved and adopted systems more practicable than the MBO schemes of yesteryear. The query on participation to the objective setting process was:

P6.1: Who are the individuals who participate in the target setting process for managerial level employees?

The query was to be resolved with data from (Q10.b).

One of the repeatedly reported weaknesses of MBO (see Carroll and Tosi (1973)) is the inordinate amount of paper work involved. Computer technology with facilities for word processing and text analysis (as well as the advantages of storage and retrieval of, and amendments to, documents) has the capacity to reduce the paper work tremendously. As the type of data generated in an MBO process could be readily computerised, the author was interested in finding out the extent to which computers were being used to cope with the volume of data in this job related activity. The specific query related to:

P6.2: How do organisations document the objective set for management level persons?

The query was to be resolved with data from (Q.10.c).

Associated with query 6.1, discussed earlier, and the concept of documentation of objectives is the persons, within the organisation, who should hold, or have access to, the target plans compiled. As most of the MBO implementations have been vertical (see O'Shaugnessey (1976)), and downwards, on reading the relevant literature one forms the opinion that the boss stacks these documents away somewhere. A deduction would be - whoever sets the targets keeps the documents. However, in the section on effectiveness and efficiency (see Chapter 4), it has been suggested that managerial effectiveness may be evaluated in terms of the degree to which one manager facilitates the work of those who rely

on him for their inputs. This would suggest that the availability of the targets/objectives to others (i.e. members of the role-set) may be helpful. Further, it can be envisaged that availability of an individual manager's target to members of his role-set could help eliminate areas of undesirable overlap of work coverage and reduction in role confusion (see Chapter 4) in as far as this latter is due to lack of knowledge by one person, in what others are doing. However, the author was interested to know as to what transpired with reference to availability of these objective plans to other members of the organisation, and in specific to the availability of these documents to members of the role-set. The query on availability of information to others was:

P6.3: In actual practice, in organisations that set targets/objectives for their managerial personnel, to whom are the objective plans made available?

The query was to be resolved with data from (Q.10.d).

Readings in literature on setting of objectives had indicated the cyclic nature of the process, i.e. once the targets are set, the review of results would lead to the setting of new targets. The query that arose in the author's mind related to whether target setting was an organic or mechanical process. The focus here is on the time domain of setting and resetting of objectives. By mechanical is meant once a year, once in six months, etc. By organic is meant that once objectives have been set, the time domain of accomplishment would determine as to when new targets can be set. The query on the time domain of action could be verbalised as:

P6.4: In the implementation of target setting at managerial level, are the targets mechanically or organically reconsidered?

The query was to be resolved by data from (Q.10.a).

Queries regarding information systems for objective setting

The interdependent nature of the managerial jobs where, conceptually, one job must dovetail into another has been discussed many times. Specifically the objectives set for accomplishment by a particular manager depend upon inputs from other jobs and at the same time the outputs from this particular job may

act as inputs to other jobs. This suggests that in the planning for, assignment of, and evaluation of accomplishment of objectives/goals/targets there would be a tremendous need for readily available and timely information which of necessity would have to be accurate as well.

Lucas (1976) suggests that over the last two decades organisations have shown a great deal of dynamism in developing management information systems (MIS). Furthermore, investigation into the relevant literature - surveys into the computers conducted by Churchill, Kempster and Uretsky (1969), Tricker (1976) and textbooks of MIS, e.g. Higgins (1976) - revealed some interesting uses of MIS in the field of target setting, for managerial staff. Moreover the potential for the uses of MIS in target setting seemed to be even more than the reports on accomplished projects.

Nevertheless, the author was uncertain about the extent to which - i.e. the prevalency - organisations use MIS for objective setting. The literature had indicated a trend but the prevalency at the time of the survey was unknown.

The high level query on the use of MIS in target setting was:

P7: The proportion of organisations which used MIS for monitoring performance of managerial level job holders.

The query was to be resolved with data from (Q.11.aa).

Of obvious interest were the informational contents of the particular MIS being used. The interest here was in the generic typification of the information system rather than on the actual formation contents of the system. The query on generic type was, therefore:

P7.1: What types of information system do organisations use for monitoring managerial performance?

The query was to be resolved with data from (Q.11.a).

Rochart (1979) and his team at MIT have developed the concept of Critical Success Factors, the process of the delineation of which, they claim, to be highly successful in determining the informational needs in specific areas.

Earlier, in connection with job descriptions, has been presented a classification framework based on inputs, throughputs and outputs. In organisations

using MIS for objective setting, the author wished particularly to ascertain whether this basic activity model could be used for classification of information carried in the MIS. Data, to support the analytic power of the activity model, acquired in connection with objective setting information would provide an additional methodological tool for determining the information needs associated with the Critical Success Factors. The query on the activity model analysis was:

P7.2: Can the information carried in the MIS used for objective setting be classified on the basic activity model?

The query was to be resolved with data from (Q.11.b) and (Q.11.c).

Earlier, in connection with Objective Setting Queries, participation by the incumbent's role set has been discussed. The reason for suggesting participation as a means of deriving organisationally effective goals was based on the potential for contributing useful and necessary information. In organisations already using MIS for goal setting, it is conceivable that the role-set-participation could be through these latter individuals submitting their requests or offers through the MIS in use. The query on participation through MIS was:

P7.3: In organisations using MIS for objective setting, which job related individuals contribute information?

The query was to be resolved with data from (Q.11.d).

Queries on Manpower Planning

In Chapter 3 was stated that the most commonly accepted definition of manpower planning is:

> A process concerned with providing the right number and kinds of people, at the right place, at the right time doing things which help to fulfil organisational as well as individual objectives.

It seemed to the author, on the basis of this definition, that all organisations should be involved in manpower planning. Readings in relevant literature showed reports on how some organisations had undertaken projects in this area, or on how it was being undertaken on an ongoing basis (see Howard, Branham, Cannon and Johnston (1975)) and Dulewicz and Keeney (1977)); the search did not reveal any statistics on whether all organisations did undertake manpower planning in any formal way.

The high level query was:

P8: What proportion of organisations undertake manpower planning in a formal way?

The query was to be resolved with data from (Q.12.aa).

From Yewdall (1969), manpower planning could be undertaken at different levels. At international regional levels, at national level, at the level of the industry, at the level of the firm and finally at the level of the unit, i.e. the unit of analysis may be macro-macro or micro-micro. Given that a specific manpower plan can be at any level, the important thing is that this plan should be conceptually linked to the manpower plans at levels higher to it. The query on linkage of manpower plans was:

P8.1: Are the organisational manpower plans for managerial staff linked to the industry-manpower-plans?

The query was to be resolved with data from (Q.12.a).

Planning for the future is necessary for change and for contingencies. Given that organisations would be planning for growth, steady state or contraction and given that employees may move out due to retirements or outside offers that suit them better, succession planning seemed to the author to be an important aspect of manpower planning that most organisations should be involved in. The query associated with succession planning was:

P8.2: Do all organisations, claiming to be involved in manpower planning for managerial staff, undertake succession planning?

Note that training plans would also be facilitated by succession planning.

The query was to be resolved with data from (Q.12.b).

Given the high cost of recruitment and training, and the observationof researchers, e.g. Penzer (1973), that recruiters tend to select over-qualified people, who are in turn more likely to exit the organisation, the author formed the view that the synchronisation of the recruiting with manpower planning should be natural. The query here was:

P8.3: Are organisational practices in the area of managerial recruitment linked to the organisational level manpower plans?

Note that the above linkage would also be required if succession planning is being undertaken.

The query was to be resolved with data from (Q.12.c) and (Q.13.a).

The fundamental purpose of manpower planning, as stated at the start of this subsection being to ensure that individual and organisations goals are being achieved, while the initial manpower plans would be devised to fulfil this purpose, feedback information would be needed to check on success of planning and feedforward would ensure that subsequent planning, depending on the initial planning, is either just as good or better than the previous plans. Thus the existing design of the jobs should be taken into consideration in planning. The query on the feedback and feedforward was:

P8.4: Do organisational manpower plans take into account the existing quality of the design of the managerial jobs?

The query was to be resolved with data from (Q.12.a).

Queries on 'annual recruitment'

Large organisations are often involved in annual intakes of young individuals coming to the job market - the recruits could be school leavers or university graduates. The subject of 'annual intake' is not well covered in organisational literature; if one can judge from the author's experience in searching for this topic in this type of literature. The author was interested to know what types of organisation in fact were involved in such kinds of block-intakes. By type is meant big or small, production or research, nationally owned or foreign owned, etc. The high level query, thus, was:

P9: What proportion of organisations is engaged in block recruitments for potential managerial staff, and can such organisations be characterised?

The query was to be resolved with data from (Q.13.aa) and (Q.1 to Q.3).

The obvious expectation was that some sort of link between the block intake practice and organisational manpower plans would exist. However, an absence from the literature promoted the effort to collect primary data. The query on links between block recruitment practice and manpower planning was:

P9.1: For those organisations involved in block recruitment for potential managerial staff, is the recruitment practice linked to manpower planning?

The query was to be resolved with data from (Q.13.a).

Another aspect of interest to the author was the amount of control exercised by the organisation on the block recruitment process. Control necessitates the comparison between desired and manifest, (see Chapters 3 and 4). The query on control, with respect to block recruitment, relating to the effect of recruitment practices on the design of existing jobs, was:

P9.2: In organisations involved in block recruitment for potential managerial staff, are the effects of recruitment policies on the design of current jobs investigated?

The query was to be resolved with data from (Q.13.b).

Not knowing whether organisations would be involved in managerial job design, to capture the above results the above query might be rephrased in terms of

'behaviour of recruits subsequent to recruitment'

and this was to be resolved with data from (Q.13.c).

Queries related to training

As suggested in Chapter 3, training facilitates:

1. The individual to do his current job well,

or 2. Prepares him for new positions, hierarchically lateral or above the one currently occupied.

Given this perspective, training could be regarded as an effort to fit the man to the job. Some engineering is involved, rather than selection. This method of achieving fit at the individual/organisation interface could be regarded as a job design technique. The high level query in the author's mind was:

P10: What proportion of organisations are involved in arranging training schemes for their managerial staff, and can a profile of such organisations be built?

The query was to be resolved with data from (Q.14.aa) and (Q.1 to Q.3).

There were several sub-queries regarding the organisation of the training.

Job rotation, the method of putting the incumbent of one position temporarily

into another job, could be regarded as having some natural advantages: on the job, direct, little overhead costs. The query regarding the use of job rotation was:

P10.1: To what extent is job rotation used in industry, and are there special types of organisations that use this method for training purposes?

The query was to be resolved with data from (Q.14.d) and (Q.1 to Q.3).

According to Boyce (1973), however, the use of job rotation is often limited to those who are regarded most promotable. The query, then, was:

P10.2: Do all managerial level personnel take part in some training?

The query was to be resolved by data from (Q.14.a).

The purpose of job design, as stated in Chapter 1, being to seek to integrate individual and organisational goals, the author thought it highly desirable that the training that individual took part in should be co-determined by him. The query here was:

P10.3: To what extent do organisations permit their managerial staff to co-determine the training they receive?

The query was to be resolved with data from (Q.14.b).

Job rotation is likely to be internally organised. It could also be suggested that some kinds of training programmes are likely to be more cost effective if internally organised. An additional advantage of 'own organised' training programmes would be that the actual problems faced in the past could help build these programmes. Looked at in this way internally organised courses could become exercises in delineation of 'sources of problems', while at the same time serve to impart skills. The query was:

P10.4: To what extent do organisations arrange in-house training programmes?

The query was to be resolved with data from (Q.14.c).

Obviously, the organisation may find it less cost effective to organise some types of training within; further, learned societies may organise specialists conferences and symposia of particular interest to only a small number of people within any organisation. The query on participation possibilities in learning events outwith the organisation was:

P10.5: To what extent do organisations permit their managerial personnel to attend conferences and symposia?

The query was to be resolved with data from (Q.14.e).

Query on salary determination

Organisational literature is quite silent on certain aspects of salary determination: the external influences, like government advice - pay restraints - effects of union demands (in those organisations that have managerial employee unions), the company's ability to pay, etc., the author found to be not so clearly reported. So the query in the researcher's mind was:

P11: What are the conditions and events which influence salary determination?

The query was to be resolved by data from (Q.15).

Query on internal promotions

While for some organisations it may be not only desirable but necessary to promote from within, for others it may not be necessary - rather, organisations may benefit by recruiting from outside due to acquisition of new ideas. Recruiting from outside could therefore be regarded as an infusion process which prevents 'in-breeding'. The type of organisation for which internal promotions may be the only way to perpetuate and maintain would be the Armed Forces.

Through hearsay, rather than published material, the author was led to believe that some companies prefer to fill senior positions through internal promotions rather than external recruitment (and one often hears of IBM pursuing such practices). On the other hand, other organisations including the universities and the UK police forces often widely advertise positions vacant; the selection procedure attempts to ensure that the 'best' candidate gets the job; at least in theory, the internal and external candidates have an equal chance. Of course, it is possible to visualise situations where jobs might, through preference, be offered to external candidates. This could even happen as a matter of policy in senior posts. This external/internal promotion was of interest to the author. The query was:

P12: Do organisations prefer to pursue internal promotion policies with respect to managerial staff?

The query was to be resolved with data from (Q.17).

Cumming and Schwab (1978) present a theoretical argument, based on developmental perspective on performance evaluation, as to why organisations should pursue and encourage a policy of promotions from within.

Queries on skill based lateral moves

There can be organisational changes which necessitate acquisition of new skills. For example the company may acquire a computer, where previously it had none, which would for its operations require staff, including managerial level, for its operation. This being a new technology, it is conceivable that individuals within the organisation may wish to move into it. If and when such situations arise, the query in the author's mind was:

P13: Do organisations permit their managerial level staff to move over to 'new skill' areas?

This query was to be resolved with data from (Q.18).

Query on flexi-time

Flexi-time has been mentioned, in Chapter 3, as a possible means of facilitating the manager to have increased 'time-alone'. The implication was that if people are free to choose their office hours, while some may prefer early starting, others would choose late starting - thereby, in the statistical sense, the probability of disturbances would be reduced over certain 'in office' periods. However, it is conceivable that some types of organisations - say, those where the work requires a certain number to start together - may not be in a position to permit flexi-time. The author was therefore interested to know:

P14: How prevalent is the practice of flexi-time and can profiles be made of organisations that do, and do not, permit flexi-time?

The query was to be resolved with data from (Q.19).

Queries in career planning

Organisation literature was not able to clarify, for the author, certain aspects of career planning.

The three queries in this area were:

P15.1: Are individuals told of the career plans the organisation envisages for its managerial employees?

P15.2: Is training organised in pursuit of these plans?

P15.3: Are individuals' views on the envisaged plans ascertained?

These queries were to be resolved in the data from (16.a), (16.b) and (16.c) respectively.

6.3. Questionnaire development

The final version of the questionnaire presented as Appendix 6.1, was the product of several drafts where each succeeding version was an attempt at clarifying, simplifying and shortening. The basis of each redraft was discussions with people involved in training, etc. in terms of words, phrases, layout and response type (checking and interval scales).

Pilot study

The several drafts ended in a pilot study instrument. Eight managerial position holders from different functions, hierarchical levels and industry type were recruited for the pilot study. The brief given to the pilot study participants was essentially:

Step 1: - Attempt to respond to the questionnaire as if this were a real study

- Those questions not clearly posited should be omitted at first reading.

- Maintain time check for each part.

Step 2: - At the end of step 1, re-analyse the items already completed for ambiguity due to vague terminology.

Step 3: - Re-attempt those items left out in step 1, noting down reasons for initial difficulty, and suggestions for improvement.

- Maintain time check for the step.

At this stage the pilot study participants did not know the purpose of the questionnaire. The instrument was re-designed in the light of feedback and the same participants, now told the purpose of the instrument (i.e. to survey job design practices), were asked to comment on the pertinence of the items for eliciting information on job design practices.

The questionnaire form

The final instrument is in three parts; the conceptual split of the parts follows the data classification given in Section 6.1.

Wherever possible the following notion of positing questions was adopted: respondents were asked whether a certain event or process occurs, or concept or entity exists, in their organisation, e.g. are performance appraisals undertaken, and if the response is "yes," then the respondents were asked subsidiary questions

If the response was "no" they moved on the next main question. In the pilot study only two responses boxes were provided for such essentially dichotomous items; experience in the pilot study, however, indicated the desirability of providing for the third type of response: "don't know".

Response types

The questionnaire uses the following types of scales:

1. 'Yes,' 'no' and 'don't know' as discussed above.
2. Time dependent, i.e. frequency of occurrence, questions were provided with response space as follows, 'never,' 'always,' 'sometimes' and 'don't know.'
3. Questions aimed at evaluating intensity required responses on either a 7 point or a 9 point, Likert-like, scale. Only two items on the questionnaire used this type of scale: items numbered (7.d.) and (24.a.).

Open space

The open-endedness of the questionnaire design due to the exploratory nature of the survey was discussed earlier. Those questions in which raw, primary, data was sought were posited such that the respondents were provided with alternative responses followed by several empty lines, preceded with the rubric "others, please specify". The responses provided were those that the author, as a consequence of literature reported in Chapers 2 to 5, thought most logical; the reason for the form adopted in the layout of the items was, while encouraging the respondents to state their own responses by conceiving the incomplete nature of the answers provided, to channel their thoughts along certain lines.

Indication of type of respondent

It was the consensus of the participants in the pilot study that the document would require a certain degree of sophistication as well as sympathy for research on the part of the survey participants. The sophistication was in terms of understanding the concepts that the instrument was designed to gather data on; sympathy was necessary as the instrument took 60-75 minutes for completion.

6.4. Prospective Respondent Population

One of the important methodological problems faced was the decision regarding the respondents to be recruited. The actual design of the questionnaire relates to the decisions concerning the targeted respondents. In fact, the resolution of decisions in this area took the following structural form:

1. Decision concerning which individual within organisations should be requested to participate.
2. Decision concerning sampling techniques for contacting different types of organisations.

These two aspects, i.e. type of organisation and of individual respondents within these organisations, will be discussed now.

Type of respondent within organisation

Essentially, the following two strategies were considered:

1. Requesting the 'Personnel Managers' in each targeted organisation to complete the questionnaire.
2. Requesting 'Operating Managers' in the targeted organisation to complete the questionnaire. The term operating managers included all personnel within an organisation who may be classified as managerial level staff. This method of choice is consistent with the definition adopted in Chapter 1.

The possible advantages of adopting the first strategy were considered to be:

1. Homogeneity of the respondents with respect to their background - personnel function.
2. The higher probability that the respondents would:
   (a) be familiar with the concept and term of Job Design .
   (b) know the extent of prevalency within the organisation of Job Design and know the events and processes with respect to which items in the questionnaire were to be aimed in eliciting raw data.

The possible disadvantages of this approach were considered to be:

1. The managerial jobs may be designed in ways and through methods over which the personnel function may have no direct contact and over which

they may have only tenuous control.

2. Respondents in the managerial function may complete the questionnaire and report the situation as 'should be' and not 'as is.'

The author chose the second approach. The reason for this particular choice lay in the author's conceptualisation of job design being related to individual experience-in-job and, as such, data was to be collected from a sample of all managerial employees rather from a sample of personnel managers only.

The above decision raised another, subsidiary, problem - what types of respondents to choose? This is now briefly discussed.

Anchoring the respondent population

It was decided to relate the respondents to some fixed system of classifying organisations in which they held jobs, i.e. in the type of industry individuals were employed in, rather than the type of job held by them.

Different classification systems for typifying organisations have been devised by researchers and government agencies. The Industrial Training Boards (1976), for example, have been established on the basis of commonality of raw materials and products. Methods adopted by geo-economic researchers include Growing - Steady state - Declining industry type, and geographic location by region (see Cross (1980)). The Central Statistical Office annually publishes statistics showing, inter alia, number of jobs in different industry types. The Annual Abstract of Statistics (1975), for example, in Table 146, shows the number of jobs within different types of employment, classified according to the 1968 Standard Industrial Classification.

To make the survey sample representative of jobs in the U.K., it was decided to adopt this table as a guide for sample stratification.

Choice of individuals invited to participate

A problem inherent in the above two decisions was that of contacting individuals to participate in the survey. This was resolved with the help of the address book published annually by the Business Graduates Association (BGA); the book, besides containing the home and office addresses, classifies members according to the type of employment held by members. The BGA employment type classification being different from the standard, a table of equivalence was

drawn up by the author. This equivalence table is shown in Appendix 6.2 . The Business Graduates Association address book (1979) contains a 25 item employment-type classification. Appendix 6.2 explains how, through the construction of an equivalence table between the BGA classification and the standard industrial classification, a sampling procedure, which would ensure the sampled managerial population to be reflective of the British industry, was adopted.

Sample size

The BGA address book contains addresses of members whether they work overseas or in the U.K.; it was decided to contact only those within the U.K. The application of this criterion gave a potential target population of around 400 individuals. Since the author's purpose was to gain an understanding of the current practices in managerial job design from a broad cross section of U.K. employing organisations it was decided to aim for 100 'usable' completed questionnaires.

Conduct of survey

The decision to conduct the survey through the Royal Mail brought many problems, associated with response rates to the fore. Response rate difficulties are invariably always faced by researchers using the postal survey method. The author was aware that the literature reported possible difficulties and suggested antidotes. In a way, emphasis on designing the questionnaire emphatically and choosing the response class from among Business School graduates were both aimed at increasing the chances of high completion rates. Pace (1939) reports an 85% response rate from questionnaires sent out to alumni. The research plan envisaged incorporating Durham graduates as far as possible. Tallent and Reiss (1959) and Plog, Tallent and Reiss (1963) report that 'oneness with the researcher and the project' contribute towards high response rates. It was thought that the research area, i.e. description of how the individual's job took shape, would be of interest to the respondents. However, to stimulate the response rate further, the covering letter to Durham graduates was written by the Dean of the Faculty of Social Science - this was done to tap their 'oneness' with the institution, i.e. Durham University Business School. The

covering letter to non-Durham graduates was written and signed by the author himself. In this latter letter was a statement in the form of an appeal directed at arousal of what has been termed by Dillman (1972), "feeling of reciprocity", based on Business School background and fellowship of learning.

The suggestion by Dillman (1972) that personalisation should be pursued was strictly adhered to: the questionnaire copy and the covering letters were personally signed and the letter had the potential respondent's name and address typed on an individual basis. Kahle and Sales (1978) also recommend personalisation as a method of stimulating the response rate. The observation by Ferriss (1951) that the use of "deadlines" stimulates the response rate was also followed through, by the inclusion of a deadline in the covering letter. The deadline was set at three weeks with respect to the date of posting. The use of deadlines is, however, a moot point. Henley (1976) reports that in his comparative study he found no difference between returns from the two sets: those marked with a deadline and those not thus marked. Nevertheless, Henley's results are not very convincing, as he allowed for only a week between posting the questionnaire and the due date (he posted the questionnaires on the 30th March, bearing the stamped statement "Please return by 7th April"). Late mail and temporary absence from address, could have prompted those solicited to think that their returns would not be on time and therefore their efforts at completion rather futile. In the survey conducted by the author, three weeks were allowed; moverover, the deadline statement was qualified: "If at all possible, please return by....." The three week deadline gets empirical support from Roberts, McCrory and Forthofer (1978).

One method reported in the literature as definitely increasing return rates, was purposely rejected. This method involves sending follow-up letters or reminders. Complete anonymity was guaranteed to those solicited and no effort was made to mark the copies sent out. In these circumstances, reminders would have entailed sending letters to all initially contacted. This, it was felt, would only antagonise those who had already replied and in any case the cost would have been high.

However, difficulties in the response rate did arise. The initial scheme

for soliciting respondents and methods used to stimulate the response rate are fully described in Appendix 6.3.

As the decision to anchor the survey on industrial classification had been made, it was decided to distribute the questionnaires in 3 waves. The returns from the first wave were systematically checked for industrial classification, and the second wave adjustments made to compensate for disproportions on returns from the first wave. For example, if 10 questionnaires were sent to industrial classification "A" and 10 were sent to classification "B" and returns were 2 and 5 respectively for these industrial classifications, then in the second wave adjustments would require that more be sent out to industrial classification "A". The third wave would depend on the combined results of waves one and two. Problems associated with "defacing of industrial codes" by respondents, is also discussed in Appendix 6.3.

Altogether, including the late arrivals, 105 evaluable responses were received. This gives a return rate of 42.9% - on its own not high, but compared with some other return rates reported in Chapters 2-6, on this and related areas is high.

6.6. Results and analysis of the survey data

The various queries stated in Section 6.2 will be resolved in this section in terms of the data collected. Note that the whole discussion will be based on the data collected even when qualifying statements like "in terms of data collected" etc. are not explicitly made in order to avoid repetition. Further, throughout this section, even when the adjectival phrase "managerial" is omitted, wherever job design is mentioned, it is managerial job design that is being referred to and discussed.

6.6.1. Queries related to job design practices

Query P1: To what extent is an attempt made, in organisations, to design the managerial jobs?

Figure 6.2 gives the analysis of the data collected from 105 respondents in terms of practice and policy of job design.

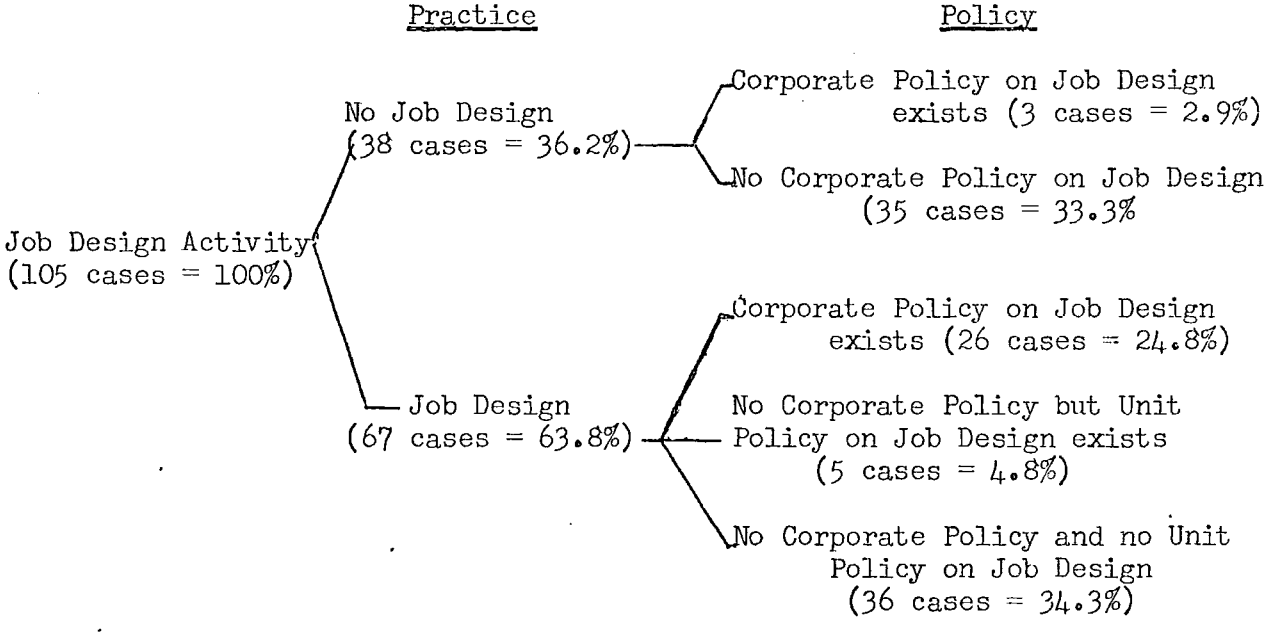


Figure 6.2: Practice and Policy on Managerial Job Design

The Figure 6.2 indicates that 36.2% of the respondents viewed their organisations not to be attempting to design the managerial jobs; within this group, however, 2.9% said that the organisation did have a Corporate Design Policy. This is to say that in a small number of cases unit heads may be ignoring the corporate directives. Of the 3 respondents (comprising the 2.9%) two had

classified themselves as Senior Management and one as Junior Management . A plausible explanation for their basic assertion - no job design while a corporate policy on job design exists - could be:

1. Senior Management having devised the policy are aware, and perhaps acutely so, that either the effort or the results are below expectations. Given this state of affairs they, while acknowledging the existence of the policy, concede that for practical purposes no Job Design is being conducted.
2. The basis of the assertion for the Junior Management person may be his own experience-in-job or that of others known to him.

Altogether nearly two-thirds of the responses indicated that Job Design was practised. However, of these:

1. Less than 40% (i.e. 24.8% of the total sample) indicated their organisation to have a Corporate Policy on Managerial Job Design.
2. Less than 8% (i.e. 4.8% of the total sample) of the respondents stated that although a corporate policy on Managerial Job Design did not exist, units within their organisations had devised policies which were known to incumbents of target jobs.
3. More than 50% (i.e. 34.3% of the total sample) respondents stated there was neither a Corporate Policy nor a Unit Policy on Managerial Job Design.

From the job design perspective, the absence of a corporate policy on job design, given that most organisations in their annual corporate accounts declare and claim, according to Watson (1978), that human beings are their most valuable resources, could be regarded as at odds with requirements of running the organisation. To paraphrase Drucker (1955), it would be sterile to talk of 'Objectives for the company' when objectives regarding Job Design - the ground rules for management of people - are not laid down at the level of the corporate entity.

What surprised the author, given that 36.2% of the sample reported no effort at job design and a further 34.3% reported an 'ad hoc' approach to designing the jobs, was the implied lack of consistency in this important area

of organisational endeavour. Given that job design is not consistently being pursued in 70% of the respondents' organisations, a plausible conclusion would be that organisations tend to rely on the selection/assignment process to achieve a fit at the individual/organisation interface.

Pl.1: In organisations that attempt to design managerial jobs:

(i) Is job design attempted with respect to specific functions of the type where the output is more readily definable, e.g. production and production type?

(ii) Where it is applied to more than one function, do organisations initiate job design in some specific function, as above, and subsequently apply it to other functions?

Figure 6.3 shows in table form the integrated responses from the 67 respondents who reported their organisations to be involved in managerial job design. Appendix 6.4 gives the details of the integrative classification adopted. The table depicts the data according to the basis of job design - policy (and level of policy) or no policy - in the respondents' organisations. The data indicates that practically all functions, whether their output is more or is less quantifiable, are equally likely candidates for job design effort.

Functional area	Corporate policy	Unit policy	No policy
1. Production & engineering	25	6	22
2. Sales & marketing	23	5	31
3. Personnel	22	5	22
4. Staff and services	26	5	27
5. Accountancy & finance	5	1	5
6. All units	2	0	0

Figure 6.3: Application of Job Design to Functional Areas

Of the 67 respondents who reported their organisations to be involved in job design, only 3 reported job design to be used in a single function of the organisation; opposed to this, 2 reported job design to be used in all the functions within their organisation. The average number of units using job design in the sampled organisations, was 3.4.

Time analysis of start of job design activity in the function

Of the 67 respondents, 60 indicated that job design had started in the various functions within their organisations at the same time. Data from the seven who indicated a staggered use of job design are shown in the table of Figure 6.4.

Job design in use since	Case No.						
	No.2	No.63	No.83	No.102	No.109	No.116	No.121
1. Last year	-	-	S+M	-	-	-	-
2. 1-5 years	S+M	S+M P	P	P+E	S+M	P+E	S+M
3. 5-10 years	P+E P S+S	P+E S+S A+F	P+E	S+M P S+S	P+E P S+S A+F	S+M P S+S	P+E P S+S

Figure 6.4: Staggered Adaptation of Job Design in Various Functions

Key: P+E = Production and Engineering
S+M = Sales and Marketing
P = Personnel
S+S = Staff and Services
A+F = Accountancy and Finance

From the table, no obvious pattern in terms of initial application to 'hard output' areas preceding 'soft output' areas is apparent. However, in five of these seven organisations, job design application to production and engineering preceded application to the sales and marketing functions.

Pl.2: In organisations using job design at managerial level:

(i) Where it is selectively applied to some hierarchical levels, is it likely to be used at the lower levels more intensely?

(ii) Where it is applied at different levels was it initially used at the lower levels?

The table in Figure 6.5 shows the data from the 67 respondents who reported their organisations to be using job design. Although not statistically significant, the data suggests a trend in the direction of greater use of job design for the middle managerial positions.

Level of hierarchy	No. reporting use of job design
1. Top management	56
2. Senior management	61
3. Middle management	63
4. Junior management	58
5. Entry level management	51

Figure 6.5. Hierarchical levels and reported use of job design

Time analysis of start of job design at different levels of the hierarchy

Of the 67 cases reporting job design, 60 reported that job design started at the various levels of the hierarchy at the same time. Data from the seven who reported time differentiated adoption of job design with respect to hierarchical levels is shown in the table of Figure 6.6. In one case (number 29) no clear pattern is indicated; in three cases (numbered 47, 55 and 109) application had been 'bottom-up'; in three cases (numbered 70, 89 and 93) the application has been 'top-down'.

However, analysis of job design practice from organisations where job design is not used at alllevels of the hierarchy, shown in Figure 6.7, could be interpreted as showing a distinct pattern, and add to the above two inferences.

The table of Figure 6.7 shows that if job design practice were extended to cover the whole organisation then:

1. In 13 cases (the first thirteen in the table) application would be 'top-down'.
2. In 3 cases (cases numbered 98, 99, and 110) it would be 'centre-outwards'.
3. In 7 cases it would be 'bottom-upwards'.

The above results are statistically significant (X^2 at 0.04).

Hierarchical level	Start of job design (see key below table)						
	Case numbers						
	29	47	55	70	89	93	109
1. Top management	2	3	1	3	3	3	2
2. Senior management	1	3	1	2	3	3	2
3. Middle management	1	1	2	2	2	2	3
4. Junior management	2	1	2	1	2	2	3
5. Entry level management	2	1	2	1	2	-	3

Key: Code 3 indicates job design to have been in use at a given level for 6-16 yr
" 2 " " " " " " " " " " " " " " 1-5 yrs
" 1 " " " " " " started within the last year

Figure 6.6. Differentiated start of job design at different hierarchical levels

														✓	✓					✓		
	71	26	80	81	15	68	111	126	42	75	91	93	106	98	99	49	53	58	74	83	110	64	78
Top man.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
Senior man.		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Middle man.					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Junior man.									✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Entry level man.																✓	✓	✓	✓	✓		✓	✓

Figure 6.7. Cases reporting application of job design to some levels of the hierarchy only

The interpretation then is that, as organisations apply job design at more than one level of the hierarchy, often middle management positions are more likely to be covered no matter what the starting strategy. Further, the significance of the last set of results indicates that the strategy for applying job design is one of top-downwards.

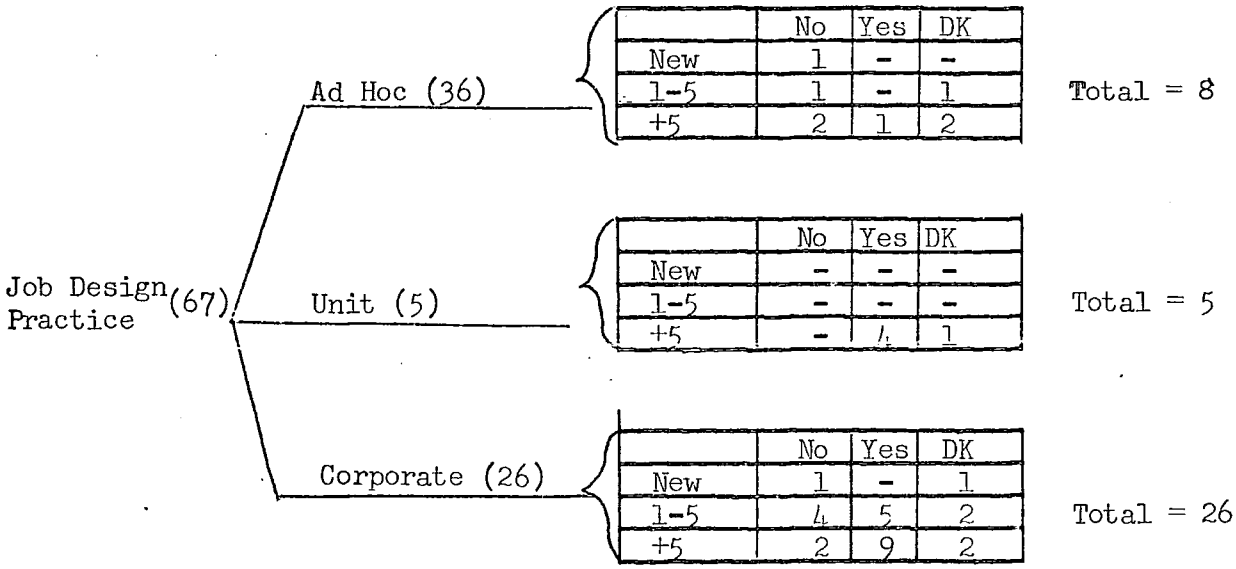
Now this is another surprising result. Literature presented in Chapter 5 indicated that when operator level jobs are re-designed, often work which was, prior to re-design, done by senior level job holders is pushed downwards in order to enrich the impoverished jobs at the bottom. If job redesign starts at the top then the following situation may arise:

1. Job elements may have to be <u>imported</u> from below to enrich the top jobs.
2. Job elements may have to be <u>shed</u> to give desirable design features.
3. Additional work may have been created.

The focus of attention being the managerial position at the top, the likely event of the first two of the above is bound to be adverse for those below

Pl.3: In organisations which attempt managerial job design is the job design policy reviewed, and if so how often is the review conducted?

Review of a policy could be regarded as a function of how long the policy ha been in operation. Figure 6.8 shows the raw data organised according to policy pursued - i.e. ad hoc, unit or corporate - and the time span of involvement in job design - i.e. whether job design is a new undertaking (less than 1 year), 1 to 5 years or more than 5 years.



	No	Yes	DK
New	1	-	-
1-5	1	-	1
+5	2	1	2

	No	Yes	DK
New	-	-	-
1-5	-	-	-
+5	-	4	1

	No	Yes	DK
New	1	-	1
1-5	4	5	2
+5	2	9	2

Figure 6.8. Pursued Policy for Job Design and Review of Policy

Note: 1. DK = Don't know
2. New = Job design started within the last year
3. 1-5 = Job design practised since 1 to 5 years
4. +5 = Job design is used since more than 5 years

Note that while respondents reporting ad hoc use of job design responded to this item in the questionnaire only 8 times (out of a possible 36), wherever a definite policy was being pursued, either a unit devised policy or a corporate set policy, responses were total. In a way, this low reportage is to be expected

What surprised the author was the number of respondents who, having reported that their organisations had corporate job design policies, and for those cases where job design had been for more than a year, more than 40% indicated that either they did not know of any review or that there was no review.

To the question "How often is the policy reviewed?" in all, 14 different types of responses were given. A possible classification for their responses and the responses within each class is given below (where the figures within brackets indicate the number of times the response was given):

1. Time dependent responses
   - A. Definite time period
     - (i) Twice a year (1)
     - (ii) Once a year (3)
     - (iii) Once in two years (5)
   - B. Indefinite time period
     - (iv) At intervals (1)
     - (v) From time to time (1)

2. Necessity related responses

A. Definite pressures
(vi) According to pressure (1)
(vii) At times of major corporate change (1)
(viii) When subject to major criticisms (1)

B. Indefinite necessities
(ix) As needed (2)
(x) When considered necessary (2)
(xi) When required (1)

3. Time and necessity related
(xii) Once in the last 10 years, when strain begins to show (1)
(xiii) Intermittently developed (1)

4. Unclear
(ixv) Don't know (1)

Pl.4. What type of persons, or groups of person, would be involved in framing the conceptual outline for managerial job design policy?

The responses to questionnaire items for resolving this query could be depicted on a three way classification. This three way classification together with the responses within each class is listed below (where the number of times the particular response was given is shown in brackets).

1. Consultants

1.1. Outside consultants (20)
1.2. Internal consultants (1)
1.3. Organisational and personnel development staff (1)

2. Company executives and official representatives

2.1. Senior company executives (31)
2.2. Board of Directors (2)
2.3. DOI (Department of Industry) (1)
2.4. Parent company (1)
2.5. Wider group (1)

3. Job holder representation

3.1. The managerial union (3)
3.2. A committee from different levels of managerial staff (4)

An analysis of the above responses with respect to the type of job design policy being pursued is shown in Figure 6.9 below, where 'class' refers to the three classes presented above, and figures in parenthesis show the number of responses within that class.

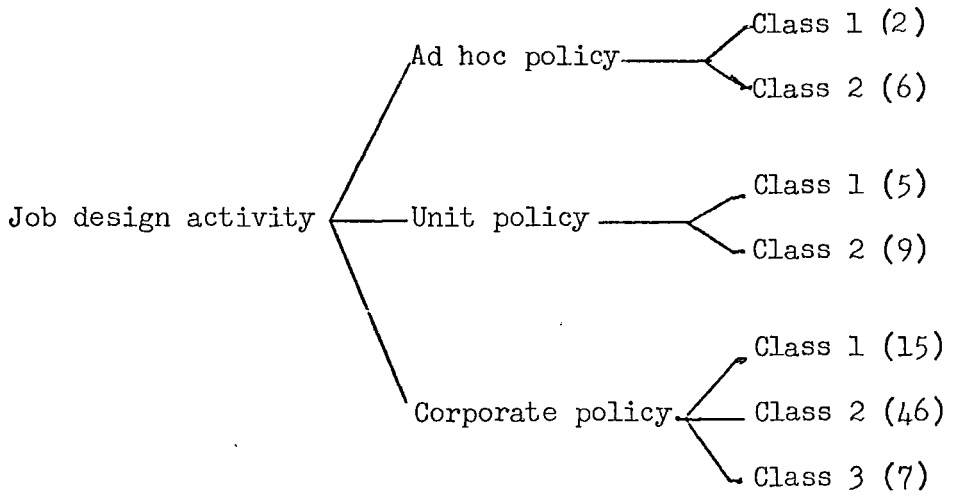


Figure 6.9. Individuals and groups involved in job design policy formulation

From the above presented data it could be inferred that junior and middle managerial staff are only infrequently involved in the formulation of job design policy and that industry holds the policy formulation as a preserve and prerogative of the senior most employee levels; consultants appear to be involved regardless of what type of policy is being pursued. From the data it appears that there is nearly 70% probability that consultants will be involved if some form of job design policy exists.

Pl.5: Where a job design policy exists are individual managers permitted to modify the policy operationally.

The data is shown schematically in Figure 6.10.

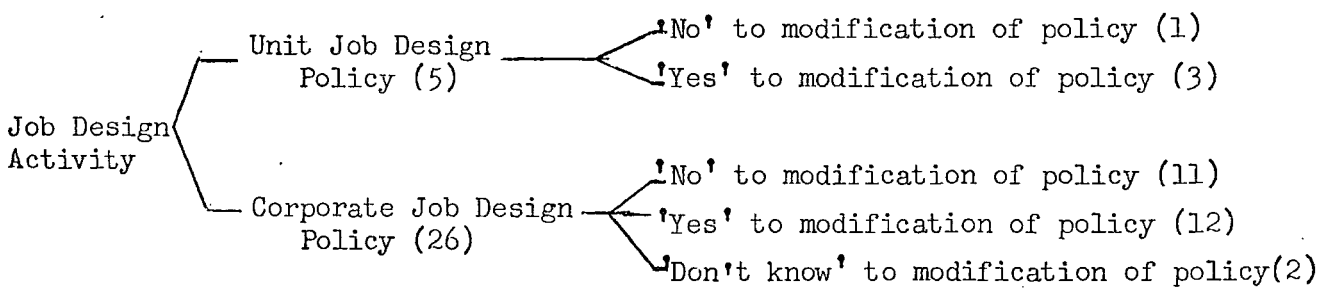


Figure 6.10. Individual modification of Job Design Policy

The data indicates there is about an even probability that individual managers

will or will not be permitted to modify the job design policy once it is formulated. The results of query P1.4 had shown that it is an exception when operating managers are involved in the formulation of the job design policy. These two sets of data taken together suggest that individual managers may experience difficulties in implementing policies. This data may partly explain the responses to query P1, when two senior management respondents reported that although corporate policy on job design existed, job design practice did not exist. Given the even chance of not being permitted to modify, and given the low probability of being involved in formulating the job design policy, a plausible explanation could be that when operating managers experience implementation difficulties, they simply abandon the effort.

Analysis by comparing size did not produce any discernible patterns.

P1.6. In organisations which attempt to design the managerial jobs, is the responsibility for ensuring that jobs are well designed designated, i.e. assigned to some individual or group of individuals, and if so with whom does it reside?

Thirty-nine respondents reported on the first part of this query. Their responses are shown below:

Responsibility not designated	10
Responsibility designated	22
Don't know	7

The author was surprised both at the low response to this item and at the more than 43% respondents stating either that responsibility was not designated or that they did not know as to whether it was designated.

As to where the responsibility was located, the responses are tabulated below where the numbers in parentheses show the number of times a particular response was given.

1. Each manager for staff reporting to him. (16)
2. Personnel department. (13)
3. Organisation staff and planning.(2)
4. Senior plant executive. (1)
5. Board of directors. (1)
6. Executive group only. (1)

The last three are specific to the respondent's organisation or position. Overall, data leads one to surmise that the responsibility is either designated on 'boss-basis' or to staff-support groups.

Sub-query Pl.8 bears on this aspect, and will be discussed here rather than in the order in which it falls.

Pl.8: In organisations involved in managerial job design is there a specialist role of job designer?

Data for this query is depicted in Figure 6.11.

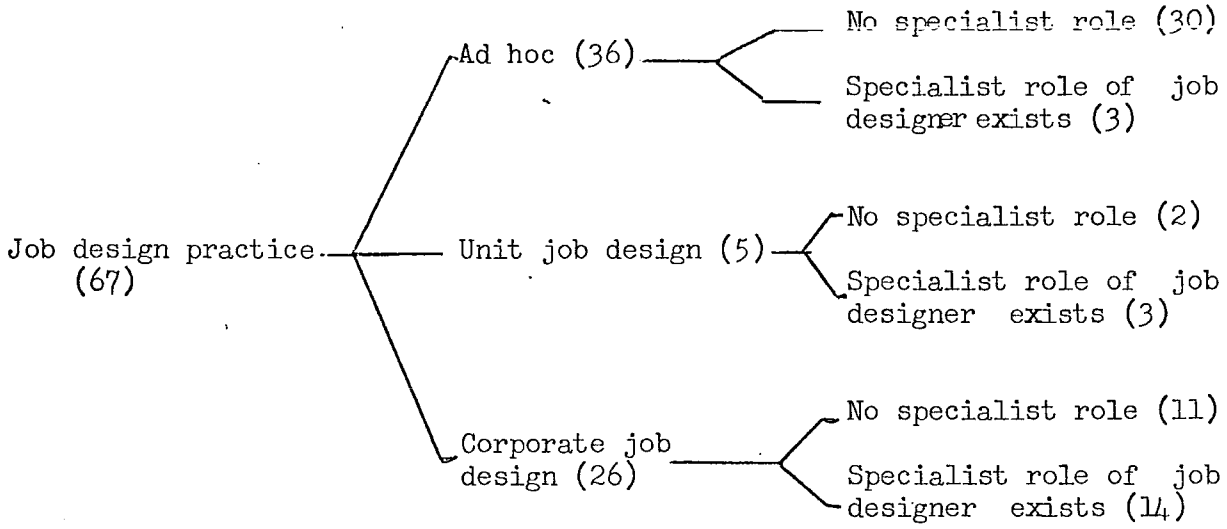


Figure 6.11:

Considering the respondents reporting job design activity within their organisations, the specialist role of 'job designer' exists in around 30% cases.

Pl.7: Is specialist training given to those who are responsible for designing the jobs of others?

The breakdown of data from this query is shown in Figure 6.12.

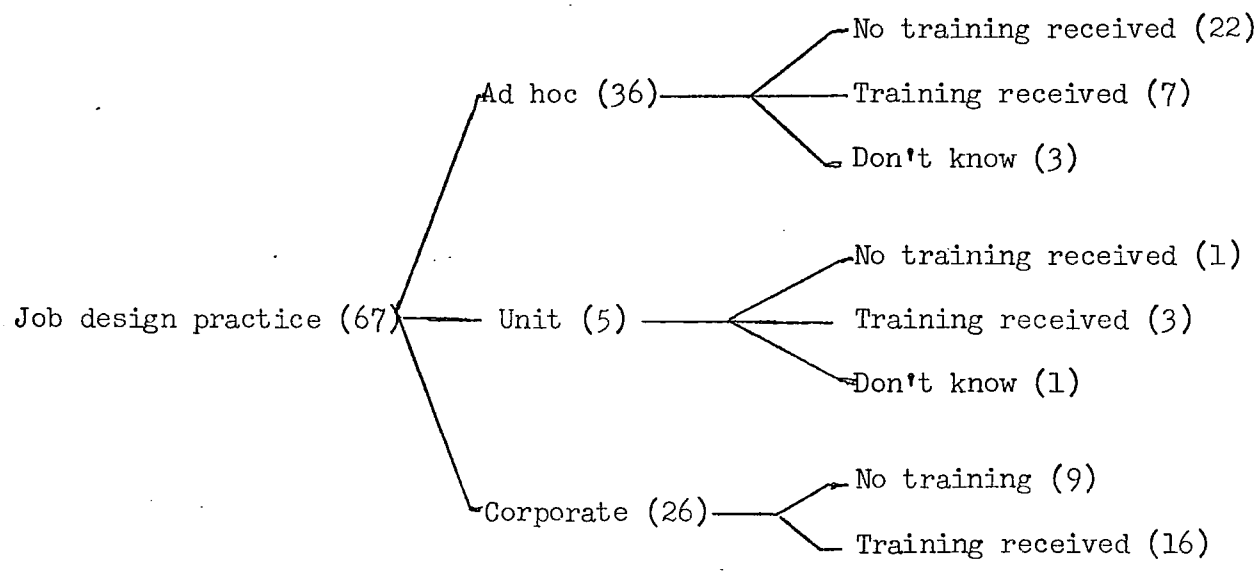


Figure 6.12: Impartation of job design training

Overall, then, data indicates that over 44% of those responsible for designing jobs do not receive any training for discharging the responsibility assigned to them. A comparison between the 'Ad hoc job designers' and 'corporate policy job designers' indicates that the probability of having received training increases where a corporate policy exists.

Altogether, the data indicates a state of affairs where either organisations give low regard to training in this important area or find that the training available is not worth the expenditure of resources on a comparative basis.

Pl.9: How do organisations collect information for designing jobs?
The total responses are classified in the table of Figure 6.13, where within parentheses are the number of reported instances.

1. Verbally - (i) job holder participation/consultation in interview or discussion (60)
   (ii) at occasional chance meetings (14)
   (iii) all the time, i.e. on a continuous basis (20)

2. Written reports - (i) structured statements (40)
   (ii) unstructured statements (13)

3. Questionnaire (11)

4. Discerned - (i) from "output" (1)
   (ii) from "the market place" (1)

5. Senior staff references - (i) monthly HQ meetings (1)
   (ii) reference to US headquarters (1)

6. Reference to other negotiations (1)

7. Left open for the individual manager (1)

Figure 6.13: Classification of methods of collecting information for job design

Of the 164 reports, 158 fell into the first three classes of the table in Figure 6.13; of the first three classes of primary importance the questionnaire method was used in less than 7% cases. This suggests that the methodology more likely to be found acceptable by practising managers would, basing the argument and the subjects' past experience, be one following the verbal/written form. Chapter 8 discusses one such methodology and Chapter 9 reports on an action research study undertaken with this methodology. A disturbing aspect to the data collected were the 14 reports where respondents reported that 'occasional chance meeting'

was the method of collecting data; here lack of systematic methodology was the disturbing feature.

Pl.10: What kind of information storage system and methods do organisations utilise for managerial job design purposes?

The most popular mode of information storage, as indicated by data collected in the survey is paper filing. Documents in these files are more likely to be typed than handwritten; the relative incidence rates of hand to typewritten documentation modes is 18 to 47. Only two respondents reported their organisations to be using some kind of modern technology for storage of information gathered for job design purposes. Four respondents reported their organisations to be using no formal method of information storage at all - in these cases the descriptions were "Informally", "Boss's memory" and "Memory (individual not computer". Table of Figure 6.14 summarises the responses received. Figures in the table clearly indicate that the formalisation in the method of recording job design information parallels the degree of institutionalisation of job design practice, i.e. the more policy oriented the practice, the more the likelihood of typed and computerised data storage.

Degree of institutionalisation of job design practice (increasing from top to bottom)	Degree of formalisation of job design information			
	Computerised	Typed	Handwritten	Memory
Ad hoc job design	-	23(40%)	12 (67%)	4(100%)
Unit policy for job design	-	4 (8%)	1 (6%)	-
Corporate job design policy	2 (100%)	20(43%)	5 (28%)	

Figure 6.14: Cross tabulation of job design practice and method of storage of job design information

P2.1: What were the reasons for initiating job design?

The 67 respondents reporting job design gave 108 reasons why their organisation took up designing jobs. The author has classified these 108 responses into 10 categories of which 9 are definitive and the 10th is an 'others or miscellaneous' class. These ten categories together with the responses within each

category and the number of times each particular response was given are presented in the table of Figure 6.15.

No significant patterns relating the reasons for adopting job design to the practice of job design (i.e. where ad hoc, unit design policy or corporate job design policy) could be discerned from the data and the classification of Figure .15.

1. Job satisfaction (33)	- to remove dissatisfaction (9) - to prevent onset of dissatisfaction (22) - to raise morale (1) - to define and agree expectations of superiors and subordinates (1)
2. Productivity (26)	- to stabilise production (3) - to boost production (22) - to improve technical quality (1)
3. Assignment (3)	- to aid placement (1) - to aid succession planning (1) - to define the needs of particular positions
4. Staff development (4)	- to classify development scope (1) - to develop staff more fully (1) - to aid individual development (1) - to provide guidance to job holders (1)
5. Salary administration (10)	- to help improve salary administration (5) - to rectify imbalance in salary (1) - to create parity in salaries (2) - to link performance and rewards (1) - to help in job evaluation (1)
6. Turnover (1)	- to reduce staff turnover (1)
7. Organisational dynamics (21)	- to control and facilitate organisational change (10) - to facilitate management control (3) - to prevent unionisation (1) - to delineate authority (4) - to manage growth (3)
8. Performance evaluation (1)	- to evaluate performance better (1)
9. Objective setting (4)	- to set objectives better (1) - to facilitate flexible individual contribution in MBO (1) - to verify objectives (1) - to define job (1)
10. Miscellaneous	- difficult to say, probably because the organisation thought it ought to! - to create a more professional image - because a vacancy arose - enforced on us by parent company - fashionable influence of USA companies - good management hygiene

Figure 6.15: Classification of reasons given for start of job design.

P2.2: What are the philosophies underlying the job design practices?

The sixty-seven respondents reporting job design practices listed 116 statements on philosophy underlying the job design practices within their organisations. The table of Figure 6.16 presents a six element classification, where the sixth class contains the miscellaneous category, of these responses.

Class	Ad hoc	Unit Job Design Policy	Corporate Job Design Policy	Row's total
1. To give greater satisfaction to employee	5	4	16	25
2. To provide training opportunities	5	4	18	27
3. Adjust demands for contribution to individual wishes	3	5	12	20
4. To create job load equality	2	4	6	12
5. To create equity in remuneration	2	5	16	23
6. Miscellaneous	-	-	9	9
Col. totals	17	22	77	116

Figure 6.16: The philosophies underlying the job design practice

The nine items within the class designated 'miscellaneous' in the table of Figure 6.16 were:

1. Greater definition of job parameters
2. To improve communication and organisation
3. To improve productivity and organisation
4. To change and adjust organisation to work load
5. To link performance and rewards (2)
6. To ensure job holders are meeting the business objectives
7. To improve understanding of job responsibilities
8. To ensure equity between job contents

Note that the respondents reporting ad hoc practice, while constituting nearly 39% of those reporting job design, presented only 15% of statements on philosophy. A possible deduction from this could be that lack of consistent policy plays a role.

P2.3: Job and personal characteristics effort is put in terms of which to achieve the individual/organisation interface fit.

Job characteristics. The sixty-seven respondents reported altogether 188 job characteristics on which job matching was attempted within their organisations. This is a far cry from the job characteristics used in the Hackman and Oldham model reported in Chapter 5. Nevertheless, the number 188 is inordinately big and the largeness of this number prompted the author to find some means of reducing, by linking, the constructs, so as to bring them to some manageable form. Here are reported both the way this linkage was achieved and the final form achieved.

1. Concepts linked to 'competence, based on learning, and development'

(i) Antecedents of competence. The six constructs, often mentioned by respondents for characterising jobs, which the author holds to be conceptually related to competence are: experience, knowledge, qualifications, know-how and expertise. Taking the broadest meanings that could be ascribed to these constructs, Figure 6.17 shows a possible conceptual linkage of these terms to the concept of competence.

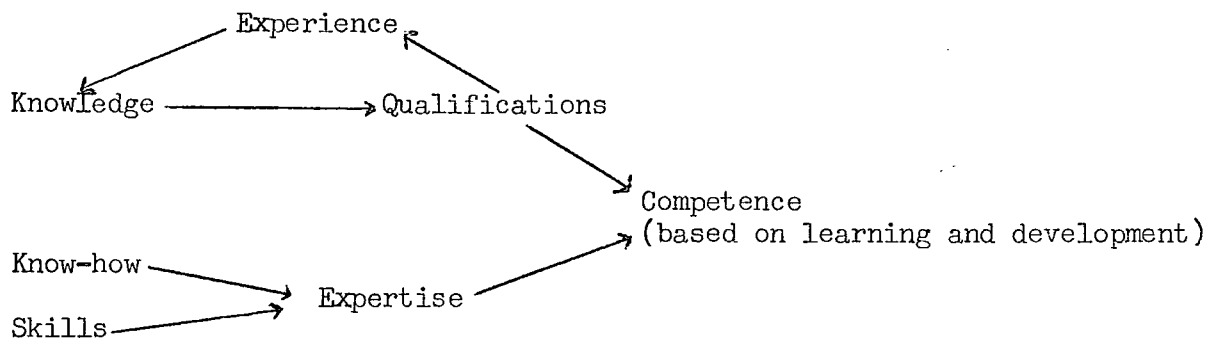


Figure 6.17: Linkage of concepts to 'competence, based on learning and development'

(ii) Anchoring competence. Competence, on its own, is too imprecise a concept, to give precision, different dimensions with respect to which competence is to be measured have, in practice, to be stated. The qualifying riders used in the measurement of competence for holders of managerial positions are of the type: Technical, Financial, Managerial, and Commercial. Figure 6.18 shows how the construct 'competence, based on learning and development' is linked to the anchors along which competence is measured.

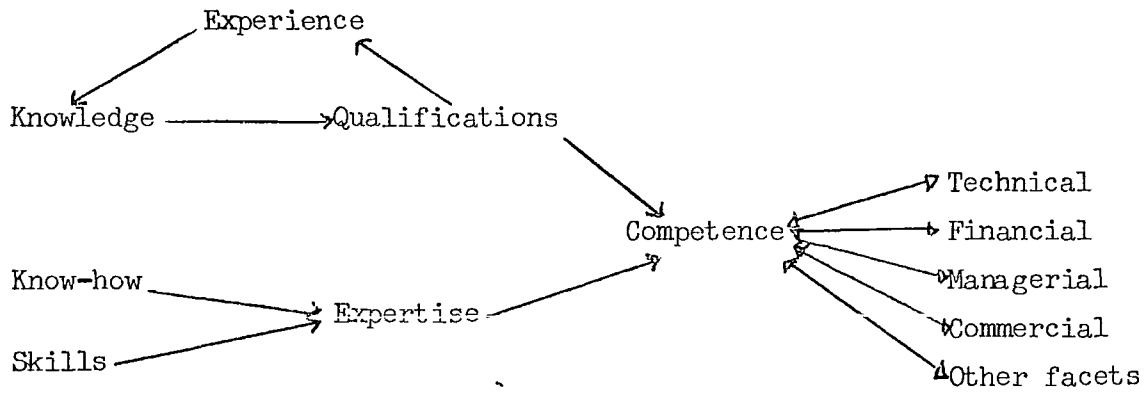


Figure 6.18: Linking competence to anchors for measurement

While the model of Figure 6.18 presents a good analytical framework for summarising and linking the data, it is by no means complete, especially with respect to the anchors. For the anchors could themselves be visualised as being at different levels of conceptualisations, i.e. global, macro or micro. The reports by the respondents, and the model of Figure 6.18 suggest that in attempting to achieve the competence fit the important concepts are:

- types of competences; range of competences
- degree (or intensity) of facet competence

which the job either demands or could, in time, impart to the job holder; or which the job holder wishes to contribute, or acquire. The constructs, reported by respondents, forming the complex having competence as its node will now be presented. Note these competences are sometimes appended with the requisite anchors but, more often, anchors are not directly mentioned.

- Experience; work experience; previous experience; experience level;
- Qualifications; educational background; educational requirements;
- Knowledge needed; industry knowledge; level of technical knowledge required;
- Professional expertise; management expertise;
- Skills required; skills needed; quantitative skills; technical skills needed; commercial skills; diagnostic skills; skills and knowledge required; physical skills; mental skills; skills; level of technical skills required; professional skills; interpersonal skills; range of skills;
- Know-how requirements; know-how;

Some respondents reported only what has been, in terms of the model of Figure

6.18 called the facets or dimensions:

- Technical competence; technical; technical issues;
- Financial; financial management;
- Managerial;
- Commercial; commercial issues;

2. Global concepts of jobs

Some respondents reported global concepts which in application could be operationalised in terms of the model presented under the foregoing sub-heading of competence, based on learning and development or under any of the sub-headings to be discussed after this one.

The terms used by the respondents and which the author classifies under this sub-heading are:

- Dimensions of job
- Job summary
- Functions
- Type of work
- Professional requirements

3. Individuality for job

Three of the 188 job characteristics reported could be classified as depicting modalities of the personality. These three are:

- Qualities
- Character needed
- Determination required

4. Job elements

Some of the job characteristics mentioned by the respondents are of the class described in chapter 3 as the element model .

The general terms within this class are:

- Activities
- Tasks to be performed
- Methods
- Key tasks

The specific concepts in terms of which jobs are being measured are:

- Planning; co-ordinating; monitoring; control; work management; decision making;

5. Inputs and outputs from job

A number of respondents reported that, in their organisations jobs were being characterised in terms of the outputs required from the position occupier; some respondents reported job characterisation, within their organisations, to

be in terms of inputs provided to the job holder. Note that it was not always the case that the same individual mentioned characterisations to be in terms of both inputs and outputs.

The terms used for characterisation of inputs and outputs were:

- Output required; output; output targets; reporting output; actual outputs; required outputs;
- Inputs; input targets;

Also mentioned by respondents were concepts associated with inputs and outputs:

- Outputs not satisfied
- Quality of goods
- Who supplies the raw materials

6. Constraints on job

The survey respondents also mentioned that job design considerations in their organisations included analysis of the prevalent constraints. The three linguistic variants mentioned were:

- Restraints; regulations; constraints.

7. Discretion

Survey data clearly indicates that within organisations involved in managerial job design one of the important job characterisations constitutes the complex denoting authority and responsibility. Terms used by the respondents to reflect this aspect are grouped in the following four sub-classes:

- Resources (3); assets controlled; operating budgets; resources allocated; financial resources; resource planning; budget size;
- Accountability (3); key accountabilities; main areas of accountabilities; accountability in £s.
- Responsibility; financial responsibility; area of responsibility; span of responsibility; supervisory responsibility;
- Authority; limits of authority; scope; financial authority; direction exercised; authority required; area of authority; size of function; delegation of authority;

While the above sub-classes show the scope of discretion mostly in a general or global way one specific area of discretion - that of manpower - and the duties within and with respect to this area were mentioned so numerously, and specifically, that these, especially in the context of the managerial job, deserve a

class of their own:

- Responsibility for others; head count; number of people; number of reporting personnel; supervision given to subordinates; motivation of subordinates; man management; people handling requirements; number of staff; employees supervised; span of command; span of control; manpower planning; number of subordinates; number of people to co-ordinate;

Another special sub-class, discernable within this general class on discretion, was that used to describe the judgemental processes:

- Discretion; direction decisions (2); decision and problem solving

8. Connectivity

The parameter of managerial jobs that the survey data suggested to be of importance was connectivity to other jobs, i.e. the relationships binding the managerial job holder to those with whom he comes in contact with in the course of his work. The various aspects of this connectivity are reflected in the terms used:

- working relationships
- interfaces (2); relationships to other jobs; range of relationships; depth of relationships; relationships;
- contacts, internal;
- contacts, external (number and level); type of client
- contacts (purpose and sources); seniority of contact;
- sources of work;
- reporting structure (2); boss reported to (2); reporting relationships;
- organisational peers

Another aspect of connectivity, that of the relationships within the hierarchy, was suggested by the respondents to be also of import. The descriptions for these were:

- organisation; organisation chart;
- place in management structure; position in management structure;

9. Purpose of job

An important characterisation, where importance is deduced from the frequency of terms related to the concept, in job design practices is the 'purpose of job'. The terms, related to the various aspects of the concept, mentioned by respondents is:

- Purpose of job (3); objectives of job; what job sets out to achieve; objectives;
- Profitability of job; unit profit impact; influence on results; financial dimension; revenues; costs, likely performance;

10. Performance requirements of job

Some of the reported characterisations of jobs were based on 'criticality of job', e.g.

- Consequences of bad performance; consequences of error of judgement; impact
- Complexity of solution; nature of problem solving; complexity (2);
- Process efficiency;

11. Sufficiency of control on job holder

Also mentioned on job characterisations parameters were the required degree of external control over the position holder. Terms depictive of this were:

- Supervision received
- Requirements for direction

12. Communicational and informational aspects of job

Some of the respondents reported jobs being assessed on different aspects of communication and information:

- Type of information handled
- Complexity of information handled
- Communication requirements of job
- Information on financial performance

13. Proximity considerations in jobs

Some respondents reported their organisational practices in managerial job design to cover geographical dimensions, i.e. assessment of the job with respect to physical distances. The terms used to describe this aspect of jobs were:

- Amount of travel needed
- Geographic area covered
- Nearness to customer
- Location

14. Other characteristics of jobs

In the foregoing, the author has given a dimensional classification to the job characterisations reported by the respondents. Here are covered those respondent-reported characterisations that would, following the logic of the above classification, be independent dimensions - containing a term each. These dimensions are:

(i) - net income
(ii) - language required
(iii) - working conditions (2)
(iv) - routine contents (2); creative work; creative development;
(v) - status grading; career level;

(vi) - monofunctional versus general management
(vii) - deadlines; pressure; changing demands; demands;
(viii) - volume of work;
(ix) - range of tasks;
(x) - delegation parameters;
(xi) - training time required;
(xii) - mobility records;

Individual characteristics

The respondents reported altogether 148 individual characteristics that were being used in their organisations for the purpose of achieving the individual/organisation interface fit. In the presentation, to follow, of these characteristics, an attempt has been made to deduce broad classification for these. Note should be taken of the fact that in classifying, another equally valid classification might be possible. The classification presented should be regarded as a rough attempt at rendering shape to a complex of 148 constructs, many of which are either quite close to each other in meaning, or could possibly have more than one interpretation.

1. Personal competence

In this class are grouped those characteristics reported by the respondents which could be regarded as acquired or experienced skills.

(i) General

- Managerial skills; breadth of management know-how; depth and range of know-how; skills; particular skills; individual particular skills;
- Abilities

(ii) Specific dimensions

- Leadership (2); man management skills; handling staff; ability to manage subordinates; people management skills; ability to work in team with peers and subordinates;
- Judgement (2); decision-making; decision-making ability; objectivity
- Social skills; social interaction; ability to meet a wide range of people; interpersonal skills; ability to get on with other people in the organisation; human relations skills;
- Negotiating skills; counselling skills;
- Communicating ability; verbal capacity; quality of reporting; oral and written skills; ability to communicate orally and verbally; communication skills;
- Technical know-how, specialist skills; technical skills; parallel job knowledge;

- Academic qualifications; degrees; education; educational background; qualifications; training; professional background; technical qualifications; technical qualifications;

- Past general record; job performance; performance in previous position; successful assignments; past performance; achievements; technological proficiency;

- Experience; relevant experience; experience in different countries; experience in different jobs; good at subordinates' job; work experience; internal experience, external experience; relative experience

- Numeracy; literacy

- Financial competence; financial skills (staying within budgets);

- Ability to perform within company philosophy

2. Circumstances

In this class are grouped the characteristics which could be regarded as indicative of the circumstances, which either the job holder or his role-set face or are likely to face as a consequence of the individual occupying the position, of the individual/organisation interface.

(i) Personal

- Home base/mobility; family circumstances

(ii) Organisational

- Acceptability; interpersonal relationships;
- Seniority
- Earnings
- Job satisfaction
- Influence

3. Individual's mode of operations

- Planning; organising; organised approach; organising skills;
- Analytic; analytic ability; problem analysis;
- Delegation; ability to delegate
- Image creating;
- Administration;
- Time planning skills;
- Attention to detail;

4. Individuality

Among the attributes of individuality which the respondents reported their organisations to be attempting to match in the job are:

(i) Specific

- discretion
- persuasion
- persistence
- introvert/extrovert
- independence; self starter or not; initiative; freedom to act; self motivation; motivation;

- innovation; creativity; original thinking (2)
- disciplined worker or not
- "work horse"; stamina (health); willing to work late;
- stress tolerance; ability to work in an hostile environment; ability to work under pressure;
- physical skills
- adaptability; adaptability to job;
- confidence;
- patience;
- ambition;
- sensitivity;
- appearance;
- nationality;
- age;
- maturity; balanced viewpoint;
- logic;
- urgency;
- risk taking;
- conscientious;
- integrity;
- need for challenge; need for thinking environment;

(ii) Non-specific

- Behaviour
- attitude
- disposition
- personality attributes; personality; traits;
- character

5. Potential and capacity

Among the responses which indicate some estimate of potential are:

(i) Individual

- development (learning) potential; potential; development needs of the individual; intellectual capacity; intelligence

(ii) Personal in position

- ability to generate new work
- contribute to development of business
- handling customers

No differences were found between the three types of practice, i.e. ad hoc, group and corporate, in job design, according to this classification.

P2.4. What kinds of job design problems do organisations involved in managerial job design face?

The sixty-seven respondents reporting job design activity within their organisations listed 46 problem areas faced in the course of job design work. The problem areas reported could be conceptually split into two classes: those concerned with job design problems and those denoting impediments to designing. The problems reported will now be presented according to this classification.

A. Job Design Problems

- Differentials
- Relativities
- Priorities; prioritisation
- Work load
- Too many people
- Establishment numbers
- Age gaps
- Productivity; output needs not presently satisfied; non-compliance with targets defined
- Quality of product
- Defining key tasks
- Weaknesses and strengths; technical and personal
- To move people into what they are better at
- To help people meet their career plans
- Role overlap
- Staff motivation; lack of motivation;

B. Impediments to design

- Cultural compatibility
- Linguistic/communication; communication of function
- Interfunctional communication; interfunctional communication (horizontal)
- Functional interfaces
- Interpersonal relationship problems
- Company politics
- Shareholders independent role in organisation
- Unions
- Continual reorganisation
- Personal objectivity
- Lack of flexibility within organisation
- Lack of personnel manager to undertake wider reviews
- System is not formulated, so it operates when necessary, although similar processes are gone through
- Analytical
- Reasoning

Some responses were such that they could be interpreted as falling into either of the above two classes. These are now presented:

C. Either a job design problem or an impediment to designing

- Lack of experienced engineers
- "Old dogs new tricks" in a small company
- Managers who are too narrow
- Too much managerial time in job evaluation detracts from your need to see points in environmental context. Encourages management to think inwards rather than outwards
- Functional relationships
- Trade-off (time scale)
- Financial loss
- High costs
- Low orders
- Low prices

P2.5: Other individuals exercising influence over the design of a position holders job.

Survey participants who reported job design effort within their organisations invariably reported the involvement of people other than the job holder, over the design of a particular job. The table in Figure 6.19 summarises the data on the degree of influence exercised by various individuals, including the job holder, over the design of a job, as reported by study participants.

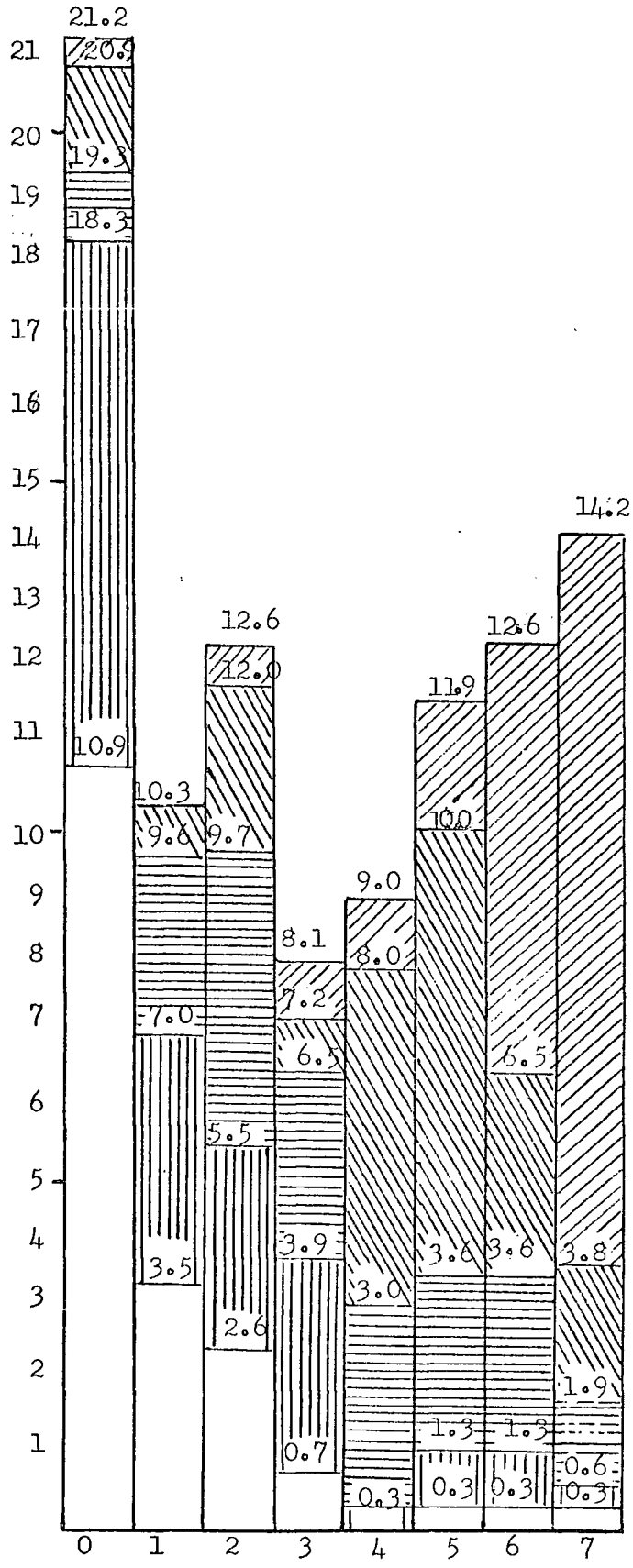
Influence exercised by	Degree of influence								Row totals (% of grand total)
	None 0	Low 1	2	3	4	5	6	High 7	
1. Boss of job holder	1	0	2	3	3	6	19	32	66 (21.2)
2. Job holder	5	2	7	2	15	20	9	6	66 (21.2)
3. Personnel specialists	3	8	13	8	9	7	7	4	59 (19.0)
4. Colleagues of job holder	23	11	9	10	1	3	3	1	51 (19.7)
5. Subordinates of job holder	34	11	8	2	0	1	1	1	58 (18.7)
Column totals (% of grand total)	66 (21.2)	32 (10.3)	39 (12.6)	25 (8.1)	28 (9.0)	37 (11.9)	39 (12.6)	44 (14.2)	310 (100%)

Figure 6.19: Data on degrees of influence exercised by different individuals on the design of a job

From the row and column totals of the table in Figure 6.19 a model of the situation extant with respect to the relative degrees of influence exercised by the various individuals mentioned, could be constructed. The diagram in Figure 6.20 shows these relative influences exercised. This figure is adjusted only for the column totals. The diagram of Figure 6.21 shows the plots adjusted for both the rows and columns of the table of Figure 6.19.

The discussion has covered individuals in terms of their relationships with the job holder. Also reported by respondents, as exercising influence over the design of specific jobs within their organisations were individuals and groups of individuals with the following designations:

- Organisation planning unit; organisation staff;
- Personnel Committee
- Performance and Efficiency Committee
- Establishment Committee
- Consultants; Hay-MSL Consultants;



Note 1: Along the base the numbers, e.g. 0,1,2, etc. indicate the degrees of influence.

Note 2: Shade codes for sections of the histogram.

= boss's influence

= job holder's own influence

= personnel specialists' influence

= job holder's colleagues' influence

= job holder's subordinates' influence

Figure 6.20

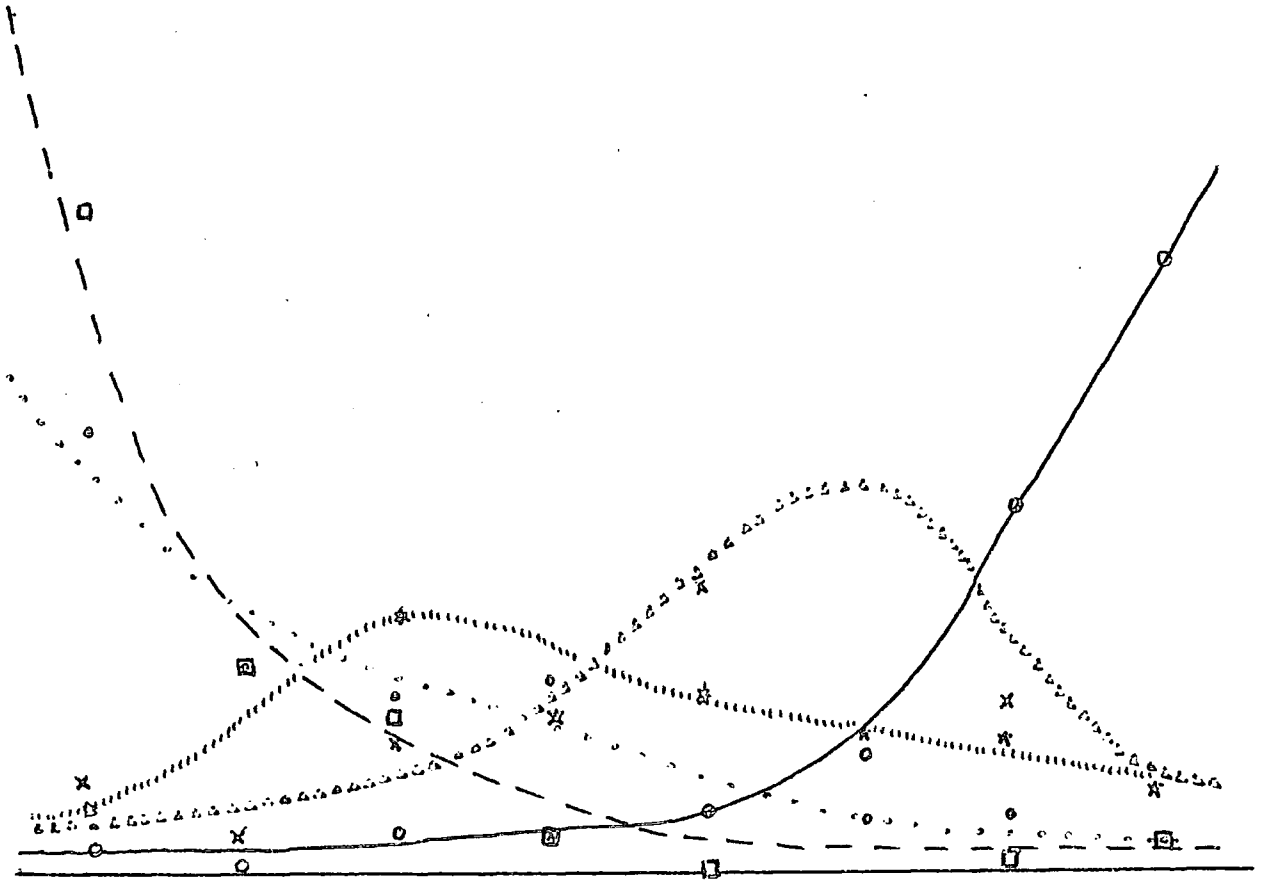


Figure 6.21: Smoothed plots of the relative degree of influence over the design of a job of a certain set of people related to the job holder

Note: In Figure 6.22, the actual numbers obtained from the survey and the smoothed curves are marked and plotted, respectively, according to the keys:

i.	the boss: data point	"o";	curve marker "——————"
ii.	the job holder: "	"x";	" " "▲▲▲▲▲▲▲▲"
iii.	the personnel specialist: "	"☆";	" " "▪▪▪▪▪▪▪▪▪▪"
iv.	the colleagues: "	"⊙";	" " " . . . . . "
v.	the subordinate: data point	"□";	" " " — — — — "

Also mentioned were designations which were either designatory or specific to the reporting organisation. Into this class fall the following items:

Specific: - Accountant;
- Client (Market);
- Industrial Engineer;

Designatory:- Directors; Board of Directors; Managing Director;
- Top Management;

No differences relating job design practices, e.g. ad hoc, unit design or corporate design, to the influence exercised was found.

P2.6: Establishment variables considered in the process of job design.

Among the establishment variables that were most frequently reported to be checked for in managerial job design process are shown in the table of Figure 6.22.

Establishment variable	Number of respondents reporting check on
1. Responsibility given to the job holder	50
2. Authority available to job holder	48
3. The structure of the organisation	47
4. Information flow system, methods and procedures	35
5. Administration control procedures	34
6. Financial budgeting systems	30

Figure 6.22: Establishment variables checked during managerial job design

Excluded from the above table are the following three items:

- Financial authority for sanction of capital, invoices, orders, etc.
- Number of staff
- Budget expenditure

6.6.2. Queries related to organisational events, processes and practices

In this section will be presented the results from the survey based on data from queries relating to organisational practices which bear upon or arise as a consequence of the design of a job.

Query 30: What proportion of respondents report their organisations to be involved in issuing job descriptions to their managerial staff?

Figure 6.23 shows the job descriptions practices as reported by the 105 respondents.

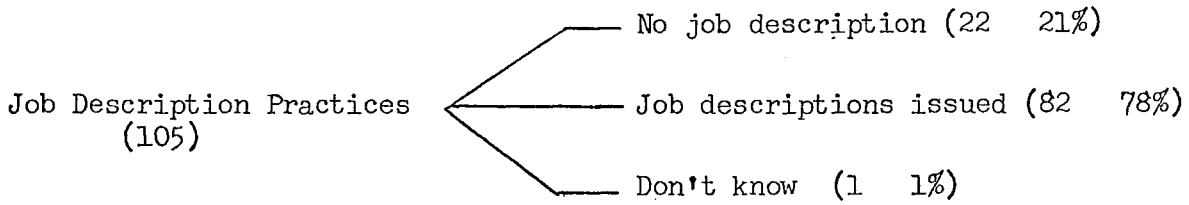


Figure 6.23: Job Description Practices as reported by survey participants

The data of Figure 6.23 concurrently analysed in terms of the type of job design practice, e.g. ad hoc, unit policy or corporate policy, is shown in the table of Figure 6.24:

Job design practice	Job descriptions	
	No	Yes
No job design	15	23
Ad hoc job design	7	28
Unit job design policy	-	5
Corporate job design policy	-	26

Figure 6.24: Type of job design practice and whether or not job descriptions are issued

From the table of Figure 6.24 a possible conclusion could be that as the degree of commitment to job design increases, the proportion of respondents reporting the existence of job descriptions also increases.

Query 3.1: For respondents reporting the existence of managerial job descriptions within their organisations, are job descriptions provided to all managerial staff or only to some?

The data on the 'all or some' query, from the 82 respondents who reported their organisations to be issuing managerial job descriptions, is given in the table of Figure 6.25.

Response	No. of respondents registering the response (%)
1. Not all managerial level staff are given job descriptions	29 (= 35.4%)
2. All managerial level staff are given job descriptions	48 (= 58.5%)
3. Don't know whether all managerial level staff have job descriptions	3 (= 3.9%)
4. No response	2 (= 2.4%)

Figure 6.25: Responses to the query as to whether all Managerial staff have job descriptions

Thus even for organisations where managerial staff are given job descriptions, the survey data leads to the tentative conclusion that in less than 60% organisations would the job descriptions be issued to all the managerial staff.

It would be interesting to know whether those not issued with job descriptions belong to specific functional areas or to specific levels in the hierarchy. As this aspect was not investigated in this survey, a subsequent study would be useful.

Query 3.2: What are the key components of a managerial job description?

This query was presented to the respondents as:

(i) A check list of ten items, each item to be crossed 'Yes' or 'No'.
(ii) An open space for respondents to itemise the salient components, not covered in the check list, of the job description system as used in their organisations.

The table in Figure 6.26 presents the data from the check list. Figure 6.27 depicts a conceptual model of work, as a process, derived from systems theory, illustrating the schematic linkage between the above-mentioned components. The figures accompanying the model are derived from the table of Figure 6.26. Note that the components of the model have been numbered 1 to 10 within circles. This has been done to link the respondents' 'open ended' responses to the model.

Key components of the managerial job description	Response		
	No (%)	Yes (%)	Don't know (%)
1. Outputs from job holder	6 (7.3)	71 (86.6)	5 (6.1)
2. Inputs to job holder	24 (29.3)	52 (63.4)	6 (7.3)
3. The processes to be undertaken	30 (36.6)	46 (56.1)	6 (7.3)
4. The quality of outputs	36 (43.9)	39 (47.6)	7 (8.5)
5. The quantity of outputs	53 (64.6)	22 (26.8)	7 (8.5)
6. The timings of outputs	43 (52.4)	32 (39.0)	7 (8.5)
7. The quality of inputs	62 (75.6)	11 (13.4)	9 (11.0)
8. The quantity of inputs	60 (73.2)	13 (15.9)	9 (11.0)
9. The timings of inputs	60 (73.2)	12 (14.6)	10 (12.2)
10. The resources available	22 (26.8)	51 (62.2)	9 (11.0)

Figure 6.26: Response data on key components of a job description

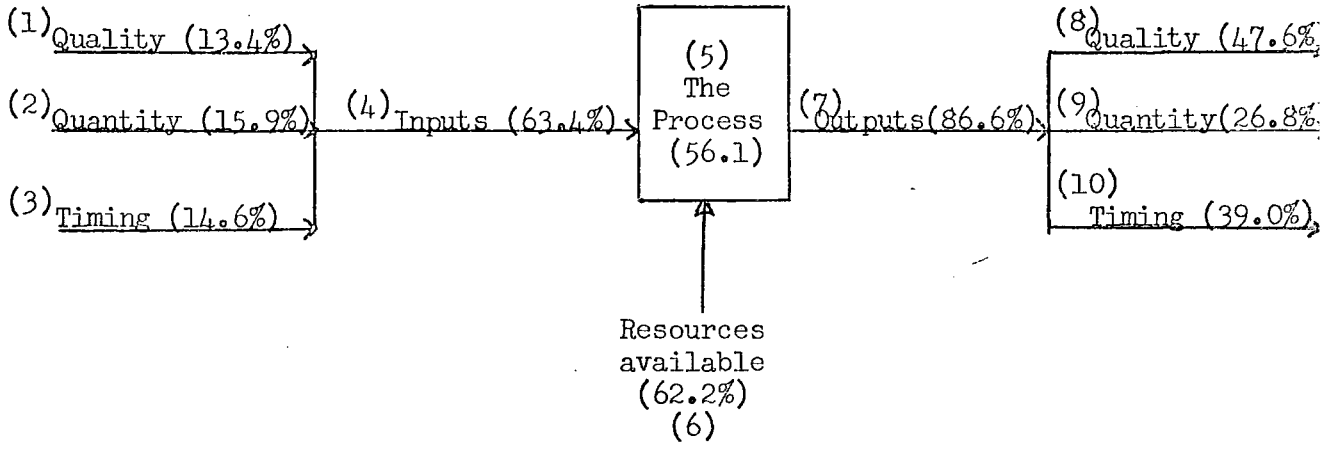


Figure 6.27: Conceptual Model of work, based on systems theory

Even a casual glance at the model shows the inexactitude in the descriptions of the job in organisations, as reported by the respondents. Even a cursory comparison of corresponding figures in the input and output sides of the model indicates a dominant interest in outputs as opposed to inputs, in the reporting organisation.

The job description components enumerated by the respondents are now presented.

- Those corresponding to component 5 of the 'work model'
  - Analysing; planning; control; advising decisions;
  - Management of staff; elements of supervision involved in job
- Those corresponding to component 6 of the 'work model'
  - Budget control; assets control; level of monetary authority; financial discussion
  - Authority; limits on authority; responsibility; principal responsibilities; general statement of responsibilities; level of decisions involved; accountabilities, direct decision; degree of personal direction
  - Experience necessary to do the job; experience; skill to do the job; education
  - Qualities; personal qualities
- Those corresponding to component 7 of the 'work model'
  - Purpose of job; area and size of operation; statement of objectives rather than outputs;
  - Annual key action plans; summary of duties and approximate percentage of time spent on each; what information to provide to management; priorities or importance of projects
- Those providing a linkage to other parts, both within and outwith the organisation
  - Organisational framework; position in organisation; organisation chart; reporting structure; content/position in organisation; reporting relationships;
  - Prohibitions
  - Communication relationships; liaison roles; nature and level of contacts (internal and external); interfaces; level of relationships with other people within the organisation; level of relationships with other organisations;

One respondent reported that in his organisation job descriptions also covered the level of remunerations.

Query 3.3: The degree to which incumbents of managerial positions, at different levels, operationalise their own jobs.

The table in Figure 6.28 presents the data from the respondents who reported job descriptions to be issued within their organisations. The table indicates that as the incumbent position in hierarchy rises, the degree of freedom to develop his own job description increases. However, this is a

Position in hierarchy	Degree of self development of job description										
	Low 1	2	3	4	5	6	7	8	High 9	Don't know	Does not exist
Top	3	1	4	2	1	10	11	13	9	23	1
Senior	3	5	3	3	5	15	23	10	3	8	-
Middle	7	4	5	12	19	12	7	2	1	9	-
Junior	15	4	22	10	8	7	1	-	1	8	1
Entry level	27	19	8	1	3	3	1	-	1	11	2

Figure 6.28: Position in hierarchy and incumbent development of job description

global statement; between organisation differences in the degree of freedom available to position incumbents at different levels were observed. Taking from Figure 6.28 the basic five by nine grid, the following patterns were observed:

1. Monotonic increase, where the pattern would be represented by a diagonal line from the bottom left-hand side to the top right-hand side. This pattern which is also reflected in the table of Figure 6.28 occurred in 36 cases.
2. Constant, where the degree of incumbent development permitted was a constant for all levels of the organisation. For pattern determination purposes, the 'degree' could be at any level, e.g. 2, 3, 4, etc. This pattern emerged in 6 cases.
3. Sigmoid increase is one in which freedom for self-development increases slowly with respect to increments from lower to upper levels at both the extremes of the hierarchy but is faster in the middle. This type of pattern occurred in 6 cases.
4. Exponential increase indicated by freedom for self development of job description, at first, increasing, often slowly, with rise in level in hierarchy, but later either much, much faster, or becoming constant with rise in hierarchical level. This pattern was obtained in 6 cases.
5. Plateau increase indicated by freedom, for self development of job description very much faster for the upper levels of the hierarchy compared with the corresponding measure at the lower levels (where the increase in freedom

with rise in hierarchy level is slow or constant). This pattern was obtained in 6 cases.

In the above five patterns, no matter which particular pattern obtained, generally speaking freedom for self development of job description, rises with movement up the hierarchy. In the two patterns to be described below, this overall pattern does not obtain.

6. Decreasing freedom with rise in hierarchy. This pattern was obtained in 3 cases. With reference to the diagram of Figure 6.28 this pattern would be obtained by a line running from the top left-hand oorner to the bottom right-hand corner.

7. 'Middle Bulge' or hyperbolic pattern. This pattern indicates maximum freedom allowed, for the self development of job description, within an organisation to occur at the middle levels of the hierarchy; both the levels of hierarchy above and below this intermediate level have lesser freedom. This pattern was obtained in 5 cases.

These patterns are reported; they might or might not have some repercussions on the quality of individual/organisation interface fit. The implications of these patterns for job design would have to be worked out in some future study.

Query 3.4: The involvement of 'others' in the development of a job description, for managerial employees at different levels.

Hierarchical level of job incumbent	Job description developed through the involvement of		
	Boss	Colleagues	Subordinates
1. Top	-	28.0%	6.1%
2. Senior	87.8%	26.8%	8.5%
3. Middle	93.9%	32.9%	6.1%
4. Junior	92.7%	26.8%	6.1%
5. Entry level	85.4%	13.4%	3.7%

Figure 6.29: Percentage of respondents reporting the involvement of various members of the role-set in the operationalisation of job descriptions

Individuals other than members of the role-set were often mentioned as being involved in the operationalisation of the job description. The designations of these 'others' have been classified into the following 4 categories:

1. Personnel Department
2. Organisation Development Department
3. Consultants
4. Positional designations

The above four categories were together mentioned 153 times; of this number 82 (54%) were references to 'consultants'. Among the five hierarchical levels, there was no difference in involvement of the above-mentioned four classes of individuals.

Query 4: The extent to which organisations use performance appraisal.

The main query elicited the responses shown in Figure 6.30:

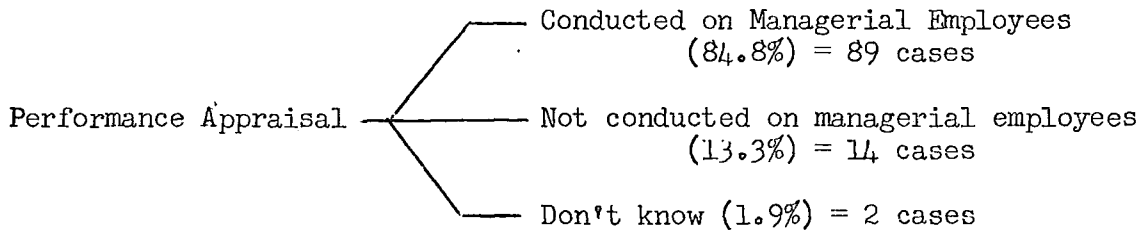


Figure 6.30: Use of performance appraisal in organisations

Of the 105 survey participants only 2 gave the 'don't know' response . The table of Figure 6.31 presents the cross-tabulation of job design and performance appraisal practices with respect to those who gave a definite answer in the performance appraisal section.

Job design practice	Performance appraisal	
	Not conducted	Conducted
1. No job design	9	28
2. Ad hoc job design	4	31
3. Unit job design	0	5
4. Corporate policy	1	25

Figure 6.31: Cross analysis of job design and performance appraisal practices

Query 4.1: Role-set participation in performance appraisal.

The responses to this query are shown in the table of Figure 6.32. For the holders of the lower level managerial positions, involvement of the Personnel Department is often present.

Designation of performance appraisal	Number of times mentioned by participants
1. Boss of job holder	87
2. Boss of the boss of job holder	12
3. Colleagues of job holder	3
4. Subordinates of job holder	2
5. Personnel department	21
6. Job holder himself	5

Figure 6.32: Participants to performance appraisal

Query 4.2: The evaluation of training needs within performance appraisal.

Of the 89 cases who reported performance appraisal to be taking place within their organisation, 78 reported that training needs were also evaluated at the same time; 8 reported 'no appraisal' of training needs and three said that they did not know whether or not training needs were evaluated.

Query 4.3: The evaluation of the design of the job during performance appraisal.

The diagram of Figure 6.33a shows the data on responses to whether or not the design of the jobs are evaluated along with performance appraisal.

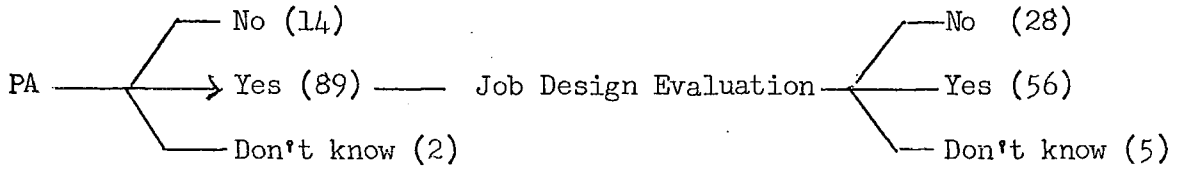


Figure 6.33a: Responses to whether job design is evaluated along with performance appraisal

Query 4.4: Frequency of the conduct of performance appraisal.

The table in Figure 6.33b presents the data on frequency of performance appraisal as reported by the 89 respondents reporting their organisations to be so involved.

Conduct of performance appraisal	Number of respondents reporting
1. More than once a year	8
2. Once a year	75
3. As often as found desirable	10

Figure 6.33b: Frequency of conduct of performance appraisal

Query 5: Prevalency of job evaluation in organisations.

The diagram of Figure 6.33c shows the survey data on organisational practices in the area of job evaluation for managerial positions.

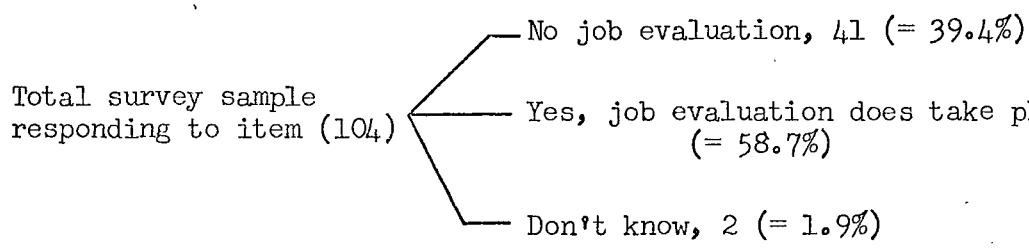


Figure 6.33c: Responses to the query on job evaluation

Co-evaluation of the basic job evaluation data with job design practices data is presented in the diagram of Figure 6.33d.

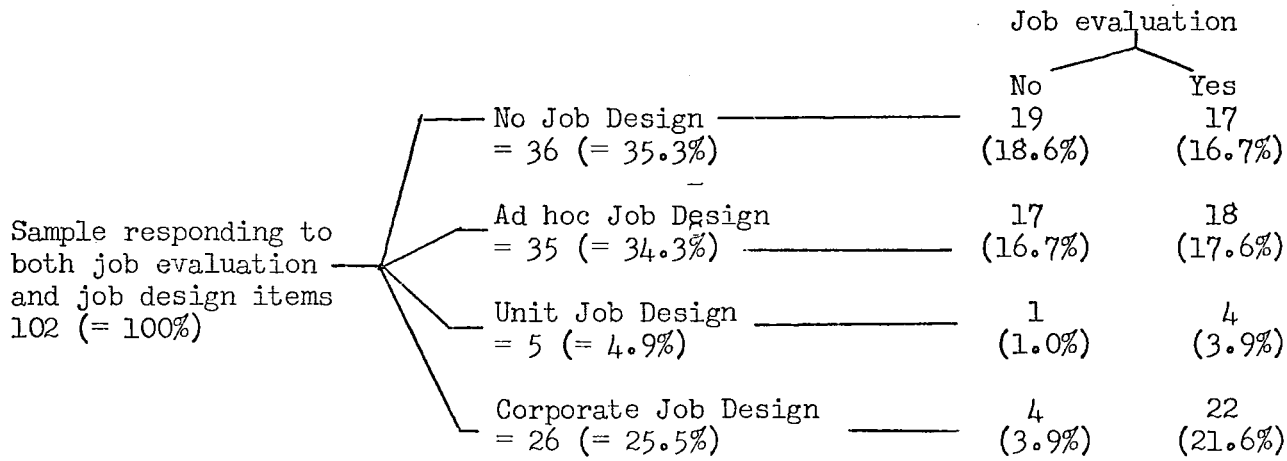


Figure 6.33d: Co-evaluation of data for job evaluation and job design practices

From Figure 6.33dit could be deduced that the likelihood of the event job evaluation increases as the commitment to job design increases; corresponding

to the four types of practices in job design, the probabilities of job evaluation within these organisation types in 0.49, 0.51, 0.80 and 0.85 respectively.

Query 5.1: The causes of job re-evaluation

Altogether 32 causes for job re-evaluation were mentioned by the respondents. The terms used to describe the causes could be viewed as being linked one to another as shown in the diagram of Figure 6.34.

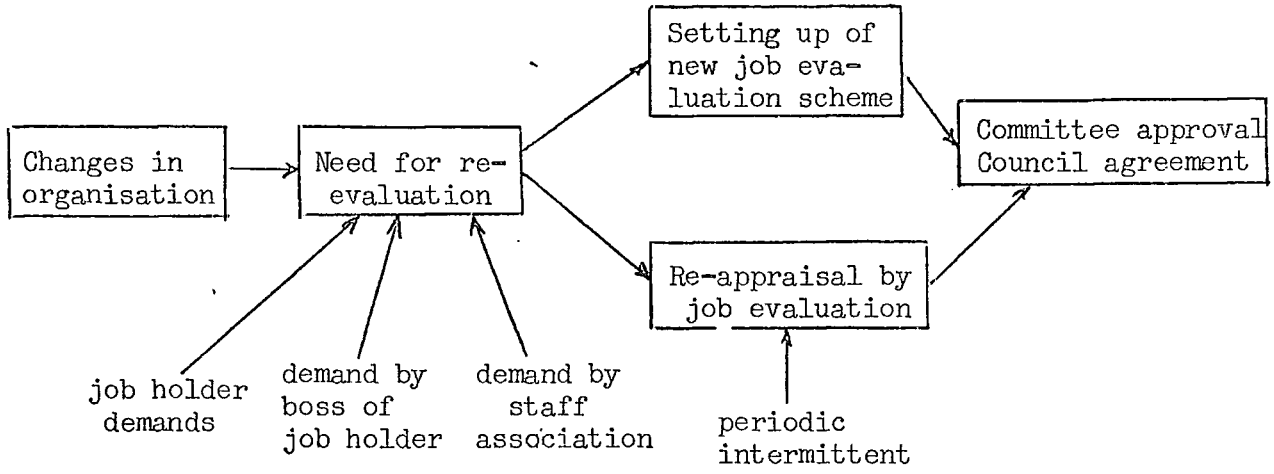


Figure 6.34: Causes of Job Re-evaluation

The diagram depicts that either changes in the organisation or lack of acceptability of current job evaluations are the main reasons for job re-evaluation, in case the job re-evaluation is not automatically and periodically undertaken. Terms used by respondents to describe the changes precipitating job evaluation were:

- organisational structural changes; organisational changes (2); re-organisation (2); as the company grows and changes; upon re-organisation; structural changes; significant changes; frequent re-organisation; environmental changes; as a result of departmental or section re-organisation; changes in job context; significant changes in job context; at the time of obvious change;

Terms used denoting changes specific to the job were:

- when job changes; changes in responsibility; when a new person takes over the job; when aspects of the job have changed;

Terms used denoting the change of status of job holder:

- promotions;

Events denoting changes in other jobs:

- changed relativities with other bench mark jobs; appeal following regrading of new job;

Query 5.2: Assignment of job grades straight from job descriptions

The table of Figure 6.35 presents the respondent data to the question are the jobs assigned grades straight from the job descriptions?

Response	Number with response (%)
1. Never	9 (14.8)
2. Sometimes	21 (34.4)
3. Always	28 (45.9)
4. Don't know	1 ((1.6)
5. Not responded	2 (3.3)

Figure 6.35: Responses to the question whether jobs are assigned grades straight from job descriptions

The above presented data could be taken to indicate that jobs, in above 45% cases, are described and evaluated on the same set of dimensions. In such cases, as discussed in Chapter 3, the degree to which these job descriptions help the job holder in the conduct of his work could be questioned.

Of the nearly 15% respondents who stated that job grades were never assigned from descriptions, it could be deduced that the organisations were using two different systems of constructs - one for descriptions and the other for grading. Under these circumstances, it would be strongly desirable to have a common database from which descriptions could be generated and grades assigned to the jobs, using whichever system of constructs was more appropriate for the particular application.

Query 5.3: Conduct of interviews with the job holder and role set in the assignment of grades to jobs.

The table of Figure 6.36 presents the respondents data to the question "Are interviews with job holder necessary for assigning job grades?"

Data in the table 6.36 shows that in nearly 26% cases, the job holder's operationalisation of the job is not taken into consideration in the assessment of jobs for assignment of grades.

Response type	Number giving response (%)	
	Job holder interviews	Role-set interviews
1. Never	15 (24.6)	28 (45.9)
2. Sometimes	29 (47.5)	25 (41.0)
3. Always	12 (19.7)	3 (4.9)
4. Don't know	3 (4.9)	3 (4.9)
5. Not responded	2 (3.3)	2 (3.3)

Figure 6.36: Responses to the question on whether interviews with job holder and role-set are necessary for assigning grades to jobs, during job evaluation

This is likely to lead to situations of 2 or more individuals, say in different locations being issued with the same job description but actually performing, according to the needs of their local environments, different jobs but yet receiving the same job grade and hence salary. This topic was discussed in Chapter 3.

The table also shows that the role-set involvement is an exception rather than a rule.

Query 5.4: Use of different sets of job evaluation constructs for jobs at different levels

The table in Figure 6.37 gives respondents' response data to the question 'Are managerial jobs at all levels evaluated with the same list of key elements?' While the data intake pertains to job evaluations, the fact that in nearly 30% of

Response type	Number of respondents giving the response (%)
1. No	18 (29.5)
2. Yes	32 (52.5)
3. Don't know	9 (14.8)
4. Not responded	2 ((3.3)

Figure 6.37: Responses to the question on whether the same set of constructs is used for evaluating jobs at different levels

organisations, different levels suggest that different sets of constructs may also be necessary for designing jobs at different levels. This could be regarded as a metaphor to be tested in future research.

Query 5.5: Job elements used in job evaluations

The author had asked the respondents to list the key elements used in their organisation for evaluating jobs; where more than one system of constructs was in operation the request was that all the schemes should be mentioned. Whereas nearly 30% had indicated their organisation to be using more than one scheme, none of the respondents presented two or more distinct lists. The elements, or parameters, used in organisation, as mentioned by respondents in this survey, for evaluating jobs were the same as presented and discussed in connection with Query 2.3.

Note: The number of terms mentioned were only 100 whereas response space for Query 2.3 had elicited nearly 200 items. However, as the classification used in presenting the data of Query 2.3 is equally applicable to the data collected here, and given that the earlier discussion was at length, the topic will not be discussed further. Moreover, there was no ascertainable difference over the use of job evaluating parameters between organisations according to their classification on job design practices.

Query 6: Use of objective setting for managerial positions

The diagram of Figure 6.38 shows the data on the use of objective setting within organisations participating in the survey as a further level of analysis. Figure 6.39 presents the same data with the job design practices superimposed.

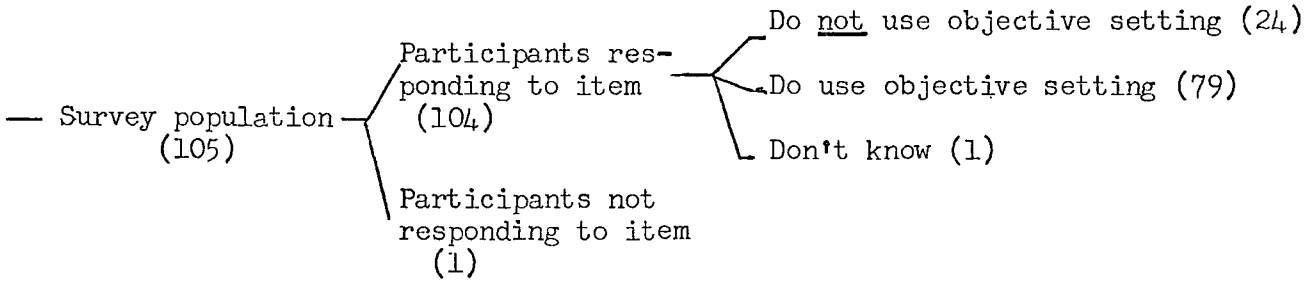


Figure 6.38: Data on use of objective setting

		Use of objective setting			
		No	Yes	Don't know	No response
Total Survey (105)	No Job Design (38)	14	23	1	-
	Ad hoc Job Design (36)	7	28	-	1
	Unit Job Design (5)	1	4	-	-
	Corporate Job Design (26)	2	24	-	-

Figure 6.39: Analysis of data for type of job design practice and use of objective setting

Once again, in going from top to bottom along the vertical axis of Figure 6.39, if the various rubrics are taken to indicate increasing organisational commitment to job design, then deductively the proportional use of objective setting increases with the degree of commitment.

Query 6.1: Participants to objective setting

The table of Figure 6.40 presents the data on the participants to the objective setting process for the 79 respondents who had indicated the use of objective setting within their organisations.

Participant	Number of respondents reporting participation (%)
1. The job holder's boss	75 (94.9)
2. The job holder himself	55 (69.6)
3. The job holder's colleagues	17 (21.5)
4. Those who receive the job holder's outputs	16 (20.3)
5. Job holder's subordinate	14 (17.7)
6. Personnel Department representative	11 (13.9)
7. Those who supply inputs to job holder	8 (10.1)

Figure 6.40: Participants to the objective setting process

The data is surprising in that:

1. The boss does not take part in all objective setting cases.
2. In 30% cases the job incumbent himself does not take part in the setting of objectives for his own position.

3. The receivers of output, and even more so the providers of inputs, are relatively ignored in the objective setting process.

Also mentioned by participants were two types of terms not included in the table of Figure 6.40. The not-included terms were:

- Type 1: Designatory rather than relative; e.g. The Board; Accountant; Other Directors; Chief Executive
- Type 2: Policy statements, e.g. Company Plans and Budgets; the Company Budget; In line with company objectives/policy.

Also not included in the table is the thrice mentioned 'boss's boss', who would be an important participant to the objective setting process.

Query 6.2: Documentation of objectives

The methods of documenting objectives, as reported by the survey participants, are presented in the table of Figure 6.41. The surprising data is in the two classes: 'left at verbal level' and 'computerised'. The first for its

Method of documenting	Number of participants reporting method (% of respondents)
1. Left at verbal level	4 (5.1)
2. Handwritten	26 (33.3)
3. Typed	57 (73.1)
4. Computerised	7 (9.0)

Figure 6.41: Methods of documenting objectives for managerial job holders

inadequacy and the latter for the infrequent use of text processing facilities (along with ease of access, etc.) that the computers provide.

Query 6.3: Availability of objectives, set for an individual, to others within the organisation

The survey participants' responses are presented in the table of Figure 6.42

Objectives are made available to	Number of respondents reporting response (%)
1. The job holder's boss	76 (96.2)
2. The job holder	75 (94.9)
3. The boss of the boss	29 (36.7)
4. Those who receive outputs from job holder	10 (12.7)
5. Those who supply job holder with inputs	8 (10.1)
6. The job holder's colleagues	7 (8.9)
7. The personnel function	5 (6.3)

Figure 6.42: Availability of objectives, set for a job holder, to others within the organisation

Not all job holders' objectives are available to the boss, while not all job holders know the objectives that have been assigned to them. Still, an even graver situation is with respect to the availability of objectives to those who supply the job holder with his inputs and outputs, and colleagues with whom he interacts in the course of work.

Query 6.4: Frequency of reconsideration of objectives

The table of Figure 6.43 presents the data on the frequency of reconsideration of objectives.

Frequency of reconsideration	Number of respondents giving the response (%)
1. Once a month	7 (8.9)
2. Once a quarter	8 (10.1)
3. Twice a year	9 (11.4)
4. Once a year	33 (41.8)
5. Whenever necessary	22 (27.8)

Figure 6.43: Frequency of reconsideration of objectives

Thus, from Table 6.43, it is clear that for a large proportion of managerial staff, namely 72.2% in industry, objective setting is a time related activity; only for a minority, 27.8%, is objective setting organically invoked - i.e. undertaken when required. Although it is hard to conceive of situations where

work could inevitably be split into slices requiring a fixed interval of time, setting objectives for a fixed period appears to be the favoured way.

Query 7: Use of information systems in monitoring individual performance

The diagram of Figure 6.44 presents data on responses to the question whether within the respondent's organisation some information system for monitoring performance existed.

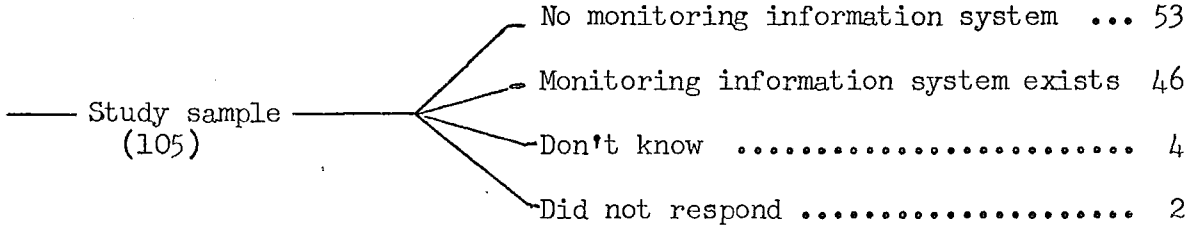


Figure 6.44: Existence of performance monitoring information system

Data here clearly indicates that in a majority of organisations no performance monitoring information systems exist; an indictment of current organisational practices.

Query 7.1: Type of monitoring information system in use

Of the 46 respondents who indicated their organisations to be using performance monitoring information systems, only 39 gave definite titles for the systems in use. The others gave vague responses like: various, results, impact, management information system, various monitoring systems, etc. These terms, while indicating the presence of monitoring systems, did not lend themselves to classification. From the other terms, the 39 cases mentioned above, the author could devise a four class typication as shown below:

1. Accounting based with titles like: budgets and milestones; budgeting and forecasting; monthly budgets; monthly profits and loss accounts; management accounts (2); cost statements; business accounts; profit centre control data; financial performance report; bonus forms; bonus scheme.

2. Evaluation based with titles such as: performance evaluation; appraisal counselling system; MBO report; performance review; key action plans and review; objective review; evaluation by boss; performance and development review systems; objective management.

3. Statistics based: annual statistical assessment; management statistics; monthly statistics report; progress statistics; monthly management reporting system; monthly review statistics; annual assessment statistics; business development performance; annual trading results and balance statistics.

4. Transaction based control with terms like: order processing control, stock system, sales statistics

The above classification is contrived by the author; from the name of the system it is difficult to devise a more accurate classification. Further research, based on this topic alone, is called for.

Query 7.2: Possibility of classifying the information carried in the information system onto the basic activity model

The table of Figure 6.45 reports the responses to the request to the respondents to tick the elements of the job reflected in the performance information system used in their organisations.

Job element	Number of respondents ticking the element (%)
1. Outputs from job holder	35 (76.1)
2. Inputs to job holder	17 (37.0)
3. The processes undertaken	9 (19.6)
4. The quality of outputs	24 (52.2)
5. The quality of the outputs	27 (58.7)
6. The timing of the outputs	27 (58.7)
7. The quality of inputs	0
8. The quantity of inputs	5 (10.9)
9. The timing of inputs	10 (21.7)
10. The resources made available	15 (32.6)

Figure 6.45: Elements of job reflected in the performance information system in use

Comparing this table with the job description table (Figure 6.27), which is based on the activity model as well, while indicating a clear difference in the focus of attention on elements of the model, gives rise to the query as to why descriptions of jobs and performance evaluation information systems should be so vastly different. After all, if an aspect of job is given low concentration in description why should it be given high prominence in evaluating performance?

Other factors on which MIS (Management Information Systems) in use carried information were:-

Dimension 1:- Costs incurred; cost results;
- Sales; sales results;
- Profits; contribution

Dimension 2:- Factors affecting results
- Problem solving areas

Dimension 3:- Training courses; development required
- Career development; promotion rating
- Overseas assignments

Dimension 4:- Action by boss; action by customer

Query 7.3: Individuals contributing to performance related management information system

The table of Figure 6.46 presents a classification of the data on the individuals most frequently mentioned as contributing to the MIS reflecting accomplishment and performance.

Contributor to MIS	Number of respondents reporting (%)
1. Job holder himself	34 (77.3)
2. The job holder's boss	29 (65.9)
3. Members of the accounting function	21 (47.7)
4. The job holder's subordinates	15 (34.1)
5. The job holder's colleagues	9 (20.5)
6. Those who receive outputs from job holder	7 (15.9)
7. Those who supply inputs to job holder	5 (11.4)
8. Boss's boss	3 (6.8)

Figure 6.46: Most frequently mentioned contributors to MIS reflecting accomplishment

A comparison of this table with the table of Figure 6.32 on those performing appraisal, shows how role-set individuals, e.g. subordinates, although not directly involved in appraisal may be influencing decisions by contributing information which reflects on the job holder's performance.

One respondent reported that in the MIS in use in his organisation, outside people, e.g. clients, could also contribute comments on his performance.

Query 8: Use of manpower planning

The diagram of Figure 6.47 presents the survey participants' responses to

the query whether their employing organisation used manpower planning. Second level analysis of those organisations involved in manpower planning in terms of their involvement in job design is shown in Figure 6.48.

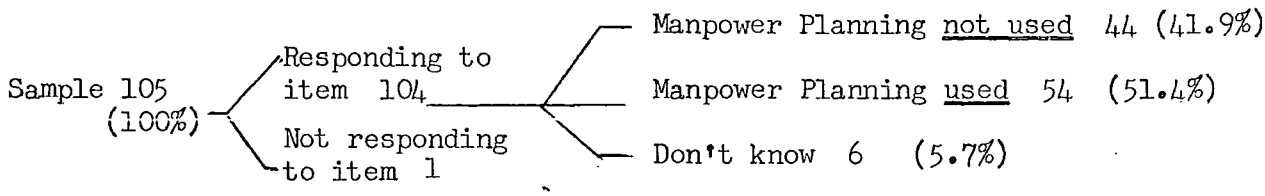


Figure 6.47: Use of Manpower Planning

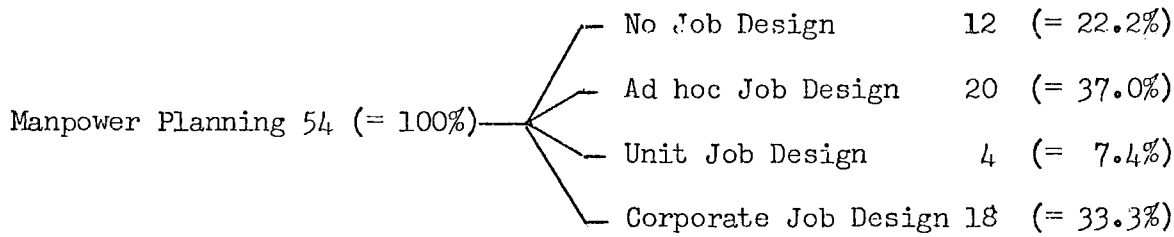


Figure 6.48: Joint occurrence of Manpower Planning and Job Design

Further analysis of the organisation using manpower planning, in terms of the explanatory variables, except for the size variable, showed patterns which were not significant. The size-variable was significant, in that very small organisations are more likely not to be involved in manpower planning.

Query 8.1: Linkage between the organisations and industry manpower planning

Only 18 respondents reported their organisation's manpower planning to be linked to the manpower planning of the industry sector in which their organisations were operating. Further research would be necessary to find out whether in the case of other organisations, no industry-wide plans existed or whether the reporting organisations had not synchronised their plans with the higher order (industrial sector) manpower plans.

Queries 8.2 and 8.3: Use of succession planning and recruitment planning within manpower planning

Of the 54 respondents reporting their organisations to be involved in manpower planning 48 reported their succession plans to beintegrated into the overall manpower plans. However, 4 respondents indicated that within their organisations, succession plans were not so integrated.

Even a lower number, namely 43 of the 54 respondents, reported the recruitment plans of their organisations to be integrated into the manpower plans. Ten of the respondents, i.e. nearly 19% reported the recruitment practices definitely not to be linked to the manpower plans. This is a surprising statistic. Further investigation into why recruitment practices are not co-aligned with overall manpower plans would be instructive.

Query 8.4: Designs of existing jobs being part of manpower planning data

The diagram of Figure 6.49 shows the data to the query whether the design of existing jobs is incorporated into manpower planning consideration. The diagram splits the data according to the type of job design practice reported by the respondents. Once again the data indicates linkage between MP and job design such that the greater the degree of institutionalisation of job design

		No	Yes	Don't know
Manpower Planning 54	12 (= 100%)	3 (25%)	7 (58.3%)	2 (16.7%)
	20 (= 100%)	5 (25%)	14 (70%)	1 (5.0%)
	4 (= 100%)	1 (25%)	3 (75%)	0
	18 (= 100%)	0	16 (88.9%)	2 (11.1%)

Figure 6.49: Incorporation of consideration on the design of existing job into manpower planning

practices, the greater the synchronisation of job design concepts into manpower planning.

Query 9: Annual (block) recruitment

Of the 105 respondents 30 stated that their organisations were involved in annual recruitment of managerial staff. A large proportion so reporting came from large organisations. 3 of the respondents came from organisations employing

less than 1,000 and 8 from organisations employing between 1,000 and 5,000. Figure 6.50 gives the breakdown for these 36 respondents according to the type of job design practice reported:

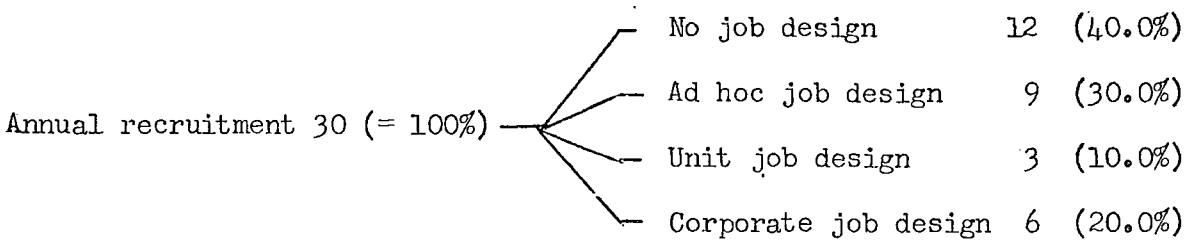


Figure 6.50: Annual recruitment and job design practices

Queries 9.1 and 9.2: Linkage of block recruitment and succession plans; observation of recruitment practices for effect on the design of existing jobs

Of the 30 respondents who had reported their employing organisations to be involved in annual recruitment schemes 4 said that they did not know whether the recruitment policy was synchronised with job design; 12 reported succession planning and annual recruitment not to be linked. The remaining 14 respondents who had said yes to annual recruitment reported further the annual recruitment policy was linked to practical succession planning. Given that of the 30 respondents who had reported their organisations to be involved in annual recruitment 46.7% had reported a link between succession plans and the annual intake, further research is needed to resolve the advantages and disadvantages of linking the two at this early stage.

To the question "are the recruitment practices investigated for effect on the current design of existing jobs", the responses are shown in the diagram of Figure 6.51. Limited as the data is, it does nevertheless show a tendency for organisations, in practice, to disregard the design of current jobs in ongoing annual recruitment.

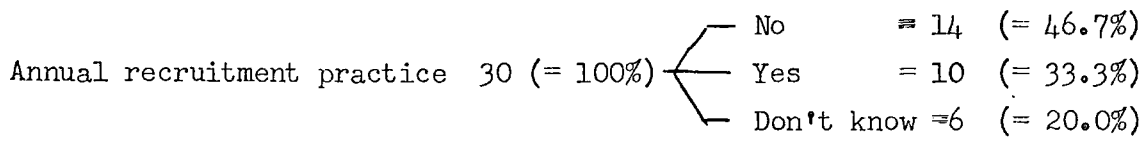


Figure 6.51: Linkage between annual recruitment practice and job design

To the question "Is the work behaviour of employees recruited under part recruitment policies taken account of in current practices", the responses are shown in the diagram of Figure 6.52.

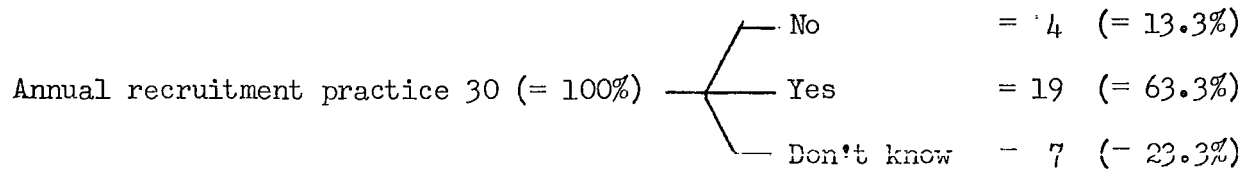


Figure 6.52: Incorporating the results of post recruitment policies into current practices

Query 10: Existence of training schemes/programmes

The diagram of Figure 6.53 gives the respondent data to the query whether training schemes for furthering the knowledge and skills of managerial employees existed in their organisations.

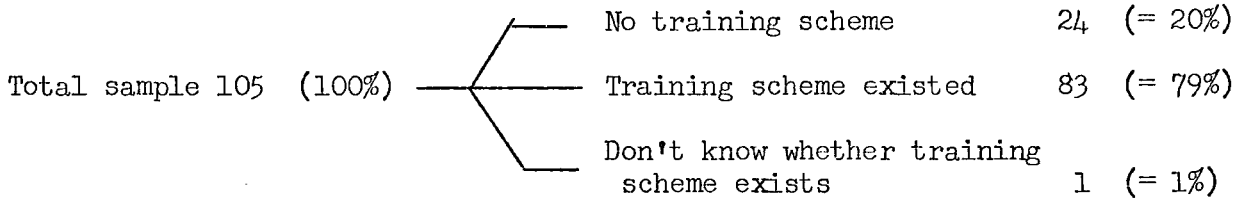


Figure 6.53: Data on existence of training schemes

Deduction from the sample would be that while for a majority of managerial employees some training possibilities are often offered, for a large minority, no training possibilities may exist. Analysis of the above data in terms of the job design practices, as reported by the same respondents, indicated that where job design was practised at unit or corporate levels, training possibilities always existed; where ad hoc job design practice prevailed the probability of training schemes was 0.11; where no job design was being practised the probability of the existence of training schemes was reduced to 0.63.

Queries 10.1 to 10.5: Compulsory training; co-determination of the training one participates in; organisation of training schemes; place of jobs rotation in training schemes; attendance at conferences in subjects of interest as part of training

To the query "is it required that each individual take part in some training", the responses are shown in the diagram of Figure 6.54. Thus, of

the respondents who reported training schemes to exist in their organisations, about half reported participation in training to be required while the other half reported it not to be a requirement.

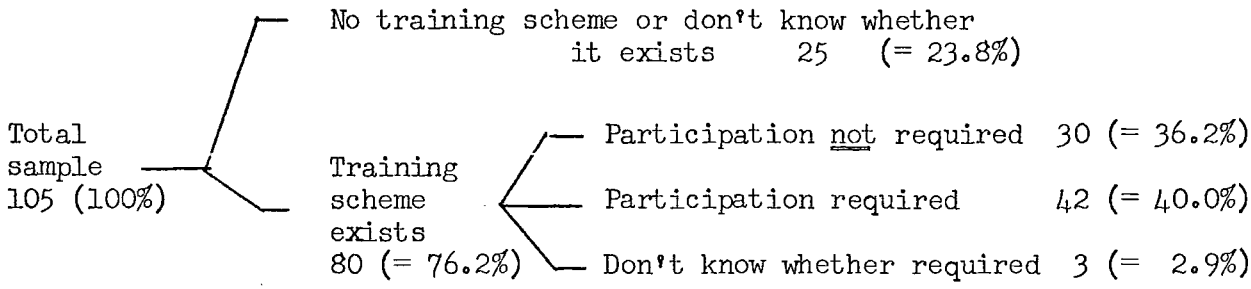


Figure 6.54: Responses to whether participation in training is required

To the query Are training needs of individuals co-determined by them , the responses are shown in Figure 6.55. The data shows expected results; the only question is why in the small minority of cases, 4.8%, do the job holders not participate in determining their own training needs?

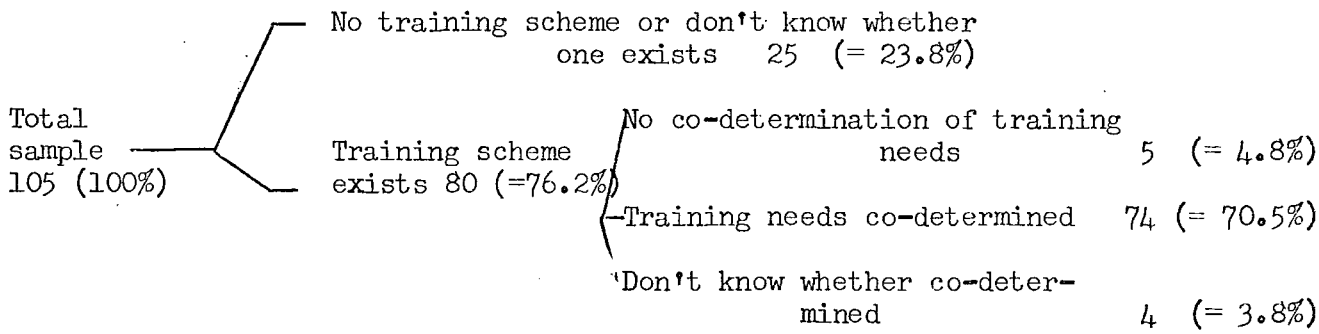


Figure 6.55: Co-determination of training needs

To the query "Are the training programmes company run/arranged?" the responses are shown in Figure 6.56. Thus, the data indicates that most schemes, nearly 93% are company run/arranged.

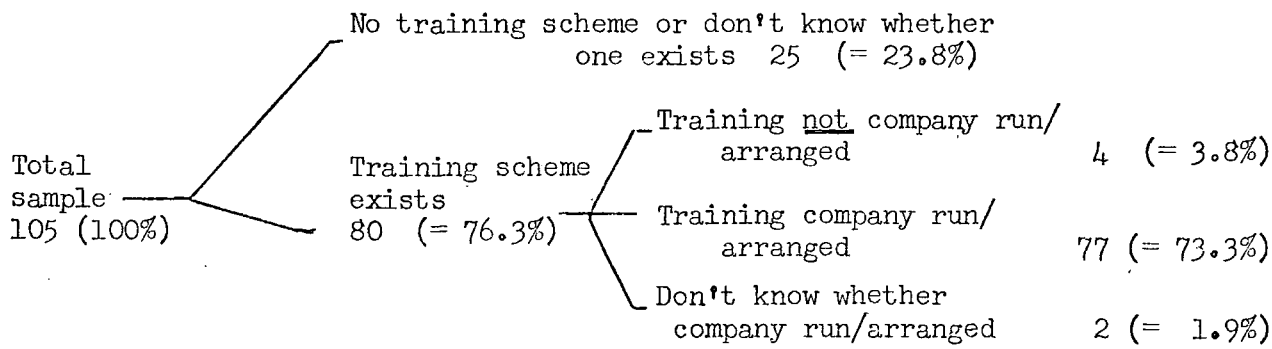


Figure 6.56: Organisation of training

To the query "Is job rotation a part of normal training?" the responses are shown in Figure 6.57.

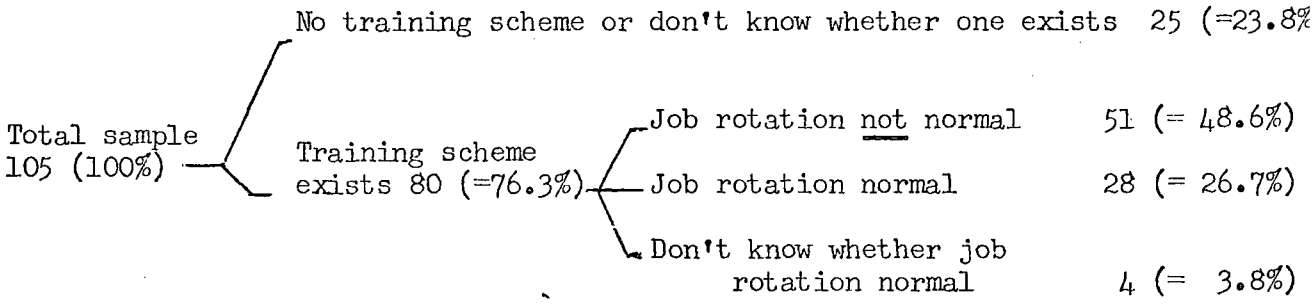


Figure 6.57: Position of job rotation within training scheme

The data clearly indicates that a majority of organisations do not use job rotation as part of their training programmes. This is rather surprising given that job rotation has the potential of producing a chain-reaction of learning and the extra cost involved would be minimal.

To the query "Do individuals have freedom to attend conferences/symposia on subjects of their interest?" the responses are shown in Figure 6.58.

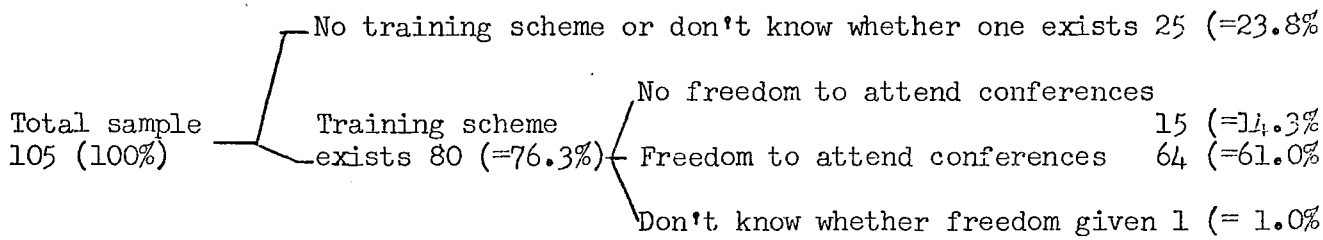


Figure 6.58: Freedom to attend conferences/symposia

A note of caution would be in order for responses to this query. A number of respondents had qualified their 'Yes' response. The following types of qualifications were appended:

1. Very limited; within limits; within reasonable limits; with limits; some; with a limit of say 5 days per annum; limited, if company is paying or giving time off.
2. In some parts, yes; in others, no;
3. But not always at firm's expense; normally if budget available;
4. If they will benefit from it; generally; subject to management approvement (sic).

These appended qualifications, overall, suggest that the item was too openly

worded giving, at least to some respondents, the idea that unlimited freedom was being discussed. The responses and the qualifying remarks, however, suggest that some further research to unravel these limitations and freedom would be in order.

Query 11: Methods of salary determination

The table of Figure 6.59 presents the response data on the most frequently mentioned methods of salary determination.

Methods of salary determination	Number of respondents reporting the particular method (% of total responses)
1. Job grading	75 (27.4)
2. Related to the prevailing industrial rates	60 (21.9)
3. Discussion between job holder and his boss	43 (15.7)
4. Government advice to industry	31 (11.3)
5. Skill contribution	27 (9.9)
6. National negotiations	26 (9.5)
7. Managerial level staff association/ union	12 (4.4)

Figure 6.59: The most frequently mentioned methods of salary determination

Two respondents also mentioned the inflation rate (cost of living) as a determinant of salary. In Chapters 3 and 4 the author, in developing the theme, attempted to differentiate between the salary for the job, the merit award which links the individual performance with the remuneration he receives and the bonus, which depends on the total company performance and thereby links the individual to the total organisational efficiency. The separation of these three components of remuneration would give greater flexibility to organisations. However, in response to this query the respondents, in addition to the above seven responses also mentioned:

- Individual performance (8 times)
- Company performance (6 times)

as determinants of salary. In this area, therefore, further research is necessary to find out whether the system of breaking total remuneration into

its component parts (basic, merit and profit) produces greater satisfaction and efficiency, or whether a simple "lump sum" concept of salary produces the same end results.

Query 12: Use of succession plans (SP)

Questions regarding succession planning have been raised as sub-queries twice before: in relation to manpower planning (Query 9) and Annual Recruitment (Query 10). Respondents, therefore, had replied to the succession planning sub-query if, and only if, they had given an affirmative response to the main queries. Here succession planning was the main query. The diagram of Figure 6.60 presents an overview to the responses to the item.

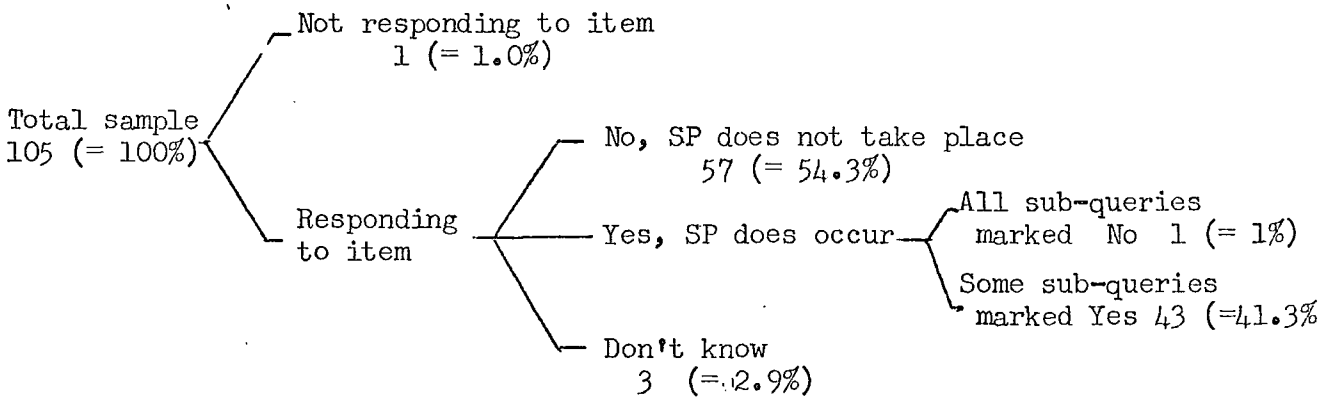


Figure 6.60: Overview of responses to main item on succession planning

Of the 43 respondents who reported SP to occur in their organisations:

- 21 reported that individuals involved in various succession plans are told of how they would be affected by the plans.
- 40 reported that their organisations attempt to organise training, where necessary, in order to prepare for eventualities.
- 32 reported that their organisation's attempt to incorporate the view of job holders, who might be affected by the planned succession, into their Succession Planning.

For this item some respondents wrote remarks which, overall, indicate a weakness in question formulation. The remarks were of the kind:

not always/sometimes/indirectly/not formally/exceptionally, etc.

This suggests that further research into the process of Succession Planning, how individuals affected by the planned succession are treated, etc., could

be conducted to bring out even more insightful behavioural data, of the process 'as conducted' rather than 'should be conducted', this latter being covered more in the literature than the former.

Query 13: Policy on internal promotions

The survey responses to the question "If a managerial position becomes vacant will it be filled by internal promotions?" are given in the diagram of Figure 6.61.

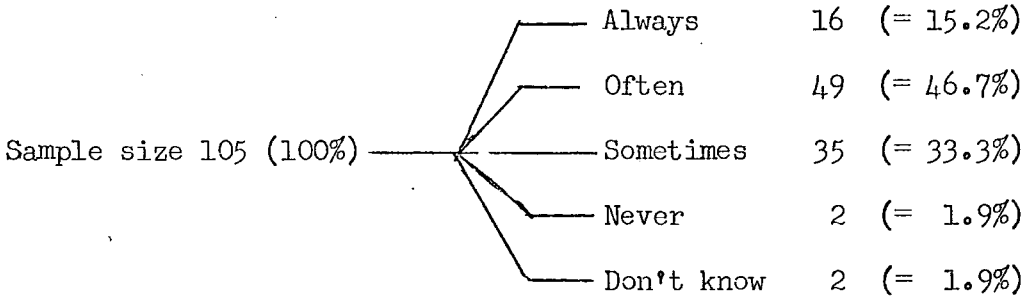


Figure 6.61: Responses to the query on internal promotions policy

Thus, the survey data indicates that preference for internal promotions is considerable. In only a minority, although quite a considerable minority, namely 15.2%, might it come to be rule rather than exception. Some of the respondents had qualified their responses with conditional clauses such as:

usually/almost/very/virtually/95% of the time/ etc.

Here again, the author suggests the need for further research to elucidate what type of organisations, under what conditions give preference to, or adopt a policy biased in favour of internal candidates. Suggestions for further research is based on the fact that the analysis of size (i.e. number of employees of the organisation to which belonged the respondents reporting their organisations to 'always' offer internal promotions, showed these organisations more often to be large. Organisation size data for the sixteen 'always' responses of Figure 6.61 is shown in Figure 6.62.

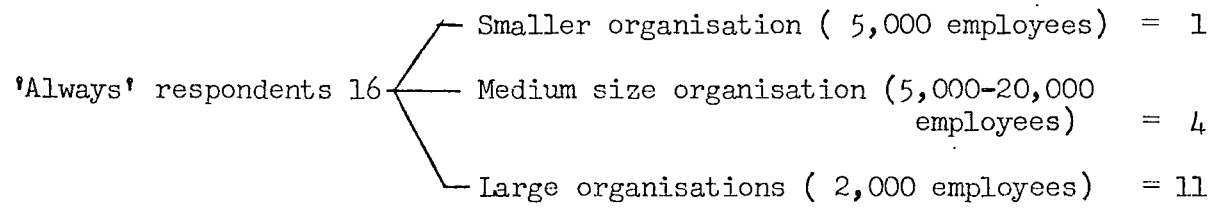


Figure 6.62: Organisational size analysis for respondents reporting internal promotions rule

The data of Figure 6.62 suggests that size may be an important variable of internal promotions policy; however, market leadership, exclusiveness of product, and a host of other factors, like the ownership of the organisation, may all be related to the policy on internal promotions. Research on these and other fundamental parameters related to the particular policy on promotion adopted by an organisation would be illuminating.

Query 14: Training for new skills required

The responses to the query "When there is need for new skills does the company offer training opportunities to current staff?" are shown in the diagram of Figure 6.63.

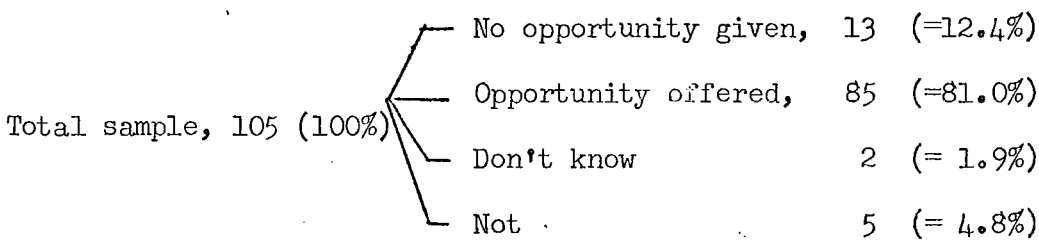


Figure 6.63: Responses to whether the organisations offer training opportunities for needed new skills

Allowing for the possibility that the urgency for the required skills may, at times, be so great as to disallow internal retraining, the fact that 12.4% of the respondents reported that their organisations do not offer retraining is rather disconcerting.

Analysis by size (number of employees) of the organisations to which the respondents reporting no training opportunity given , however, indicated that a disproportionate number (compared to the sample as a whole, belonged to organisations small in size. In fact, whereas 11 of these respondents belonged to small organisations, only 1 each belonged to organisations classified medium or large (as explained in the classification of Figure 6.62).

Query 15: Fixed or flexi-time

The survey data to the query whether flexi-time was operational in the respondents organisation is shown in Figure 6.64.

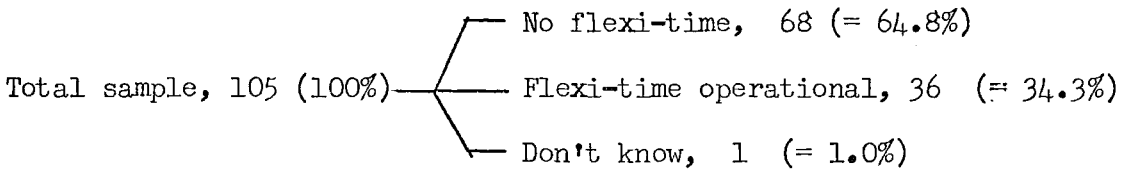


Figure 6.64: Flexi-time in operation

Since only approximately a third of the respondents reported flexi-time to be operational in their organisations, it would appear this is another, on face value, promising area of research - to find out why the facility was not operational in nearly two-thirds of the organisations. Given that literature does not report on any limitation, organisational gains are stressed; why then are so few organisations using flexi-time?

6.7. Conclusions

Under this heading will be discussed two types of conclusion: the specific and the general. These will now be presented.

6.7.1. Specific conclusion

The survey reported in this chapter was conducted to find out organisational practices specific to job design as well as the conduct of processes which impinge on the design of jobs. The data collected in the survey, while convincing the author of the necessity of further work into managerial job design, helped him to build the theoretical viewpoint now to be discussed.

The quality of the design of the job should, it is suggested by the author, be measured on the following three primitives:

- The utilisation, in the job, of personal potential
- The contribution to organisational purpose
- The satisfaction derived by the incumbent as a consequence of being the position holder

These three constructs are regarded as the basic primitives; other constructs descriptive of the job - job characteristics - or descriptive of the job holder's experience-in-job, or of the job holder himself - individual characteristics - are regarded as higher level constructs which could be studied for their effect by investigating the propensity of these latter, higher order, constructs to elicit changes in the job along the primitives comprising the quality of the design of the job.

Although, by and large, changes in a job along a given characteristic, however the characteristics may be defined, are likely to result in changes along all the three quality of design (of the job) primitives, some characteristics may, nevertheless, produce changes only only two, and some even along only one, of these primitives. If the effects of change induced in the quality of design is describable along only one (of the three) primitives, then the characteristic under consideration is likely to be a synonym for the primitive with which it is related, and not a distinct characteristic.

The acceptance of the proposition regarding the concept and components of the quality of design implies the three primitives be considered as a set of orthogonal axes along which the design of a job, at any moment, could be measured. The location of jobs in the three dimensional space of the measures would be found by first determining the set of characteristics salient to the jobs being considered. And here, with regard to the characteristics to be considered, it is worth remarking there is no universal set of characteristics that could be used for analysing all jobs, in all situations, with all position incumbents. Towards the resolution of the problem arising as a consequence of this lack of universal characteristics, the author suggests that these could be determined contingently through:

1. Consensus between experts, who have a general overall viewpoint; and
2. The job holders, who would have an intimate detailed knowledge of not only their own jobs but also be able to articulate their personal experiences-in-job.

Having resolved this first step, the focal jobs would be investigated in terms of the effect of the chosen set of characteristics, on the three primitives comprising the quality of design.

An investigation starting along the lines suggested above, would thus lead to suggestions on the direction of redesign effort, if redesign were found to be necessary.

Note that the notion of 'Quality of the Design of the Job' was arrived at through analysis and classification of over 300 constructs, that the 105 survey participants provided and which have been documented earlier in this chapter.

The author suggests that the concept 'Quality of the Design of the Job' could be the advance that is needed in the field of job design. The designing of jobs in pursuance of theories based solely on characteristics leaves the overall results of the designing effort undetermined. Hackman and Hackman (1974A), currently the chief proponents of the characteristics based theory of job design, themselves admit to this undeterminedness when they write:

"..... perhaps one of the most compelling explanations for the paucity of knowledge about work redesign is also one of the most basic: namely, that our capacity to measure (and thereby understand) what happens when jobs are changed has been very limited".

The concept of the quality of the design of the job and its operational derivative 'The Measures in the Quality of the Design of the Job', then, provide the means for:

1. Finding out which characteristics interact with which of the measures of job. Once these interactions are established

   (i) Depending on the conditions of the jobs being redesigned, the jobs could either be loaded or unloaded with respect to desirable or militating characteristics, respectively.

   (ii) Where it is found that a given characteristic affects a measure in one direction and another in the opposite direction, then effects could be made firstly to determine the optimum load and, secondly, to 'tune' the job through adjustments on the two characteristics.

2. Establish the design status of any job at any time.

3. Measuring the effects of implemented changes.

Methods currently used in attempts towards achieving the individual/organisation interface fit

Given that the survey elicited responses were:

1. No effort at job design in 38 cases (36.2% of sample).

2. Effort at job design at the level of the individual manager, i.e. no corporate policy and no unit policy in 36 cases (34.3% of sample),

this could be regarded as prima facie evidence suggesting that organisations attempt to achieve the fit at the individual/organisation interface through the recruitment/placement process rather than invoking the job design process. Taken to its logical conclusion, the adoption of recruitment/placement process would offer either a static (or at least step-by-step) approach to a situation which is manifestly dynamic. Organisations using such an approach are likely, therefore, at any specific moment, to be operating sub-optimally - either over, or under, loading, in terms of job content, the individual job holders.

6.7.2. General conclusion: a summary of the relevance of the questionnaire results to the key elements in the author's research

In this section are presented the general conclusions reached by the author and how the results obtained here furthered the research endeavour.

The survey data, and the extent to which generalisation from it are possible, indicates that:

1. (a) A wholistic theory of job design, specifically as applied to managerial jobs, was not manifest in any of the organisations represented in the survey.

   (b) Where effort is directed at job design, it is more likely to emerge from, and be based upon, the job designer's own learning through exposure to job design defects, or the reinforcing effect of having done something better before.

2. The results documented throughout Chapter 6 served to reinforce the viewpoint that the managerial job is complex, varies enormously from one manager to another and is, of necessity, contingent upon the situation - the person himself, his colleagues, his boss, his subordinates (in terms of their personality, skills and abilities) as well as the substantive elements of the tasks necessary to be performed, and finally the manner in which these substantive elements are defined.

3. There was ample evidence from the respondents to indicate that a properly developed theory of job design and an implementation methodology would be of potential value to individual job holders, and to organisations.

4. The methods of implementing job design, as reported in the survey, were so rudimentary that the author was not intimidated at the prospect of having to evolve, or find, job design methodology capable of implementing the wholistic theory, concepts regarding which were beginning to form in the author's mind. However, the author became convinced, from the data obtained in the survey, that directing his attention to the process of job design could provide information of incremental value in arriving at conclusions regarding operating characteristics which the potential job design

methodology would have to possess for it to further implementation.

Research leads

Having delineated the constructs for measuring the quality of the design of the job, and knowing that jobs are only infrequently purposively designed in accordance with some predetermined corporate-wide policy, the author became interested in finding out what happens, from a job design perspective, when existing jobs are modified. Also, of increasing import because the effect of job characteristics, or rather changes along these, on the measures of the quality of design.

Further, process of job design, i.e. the way in which jobs acquire the attributes of shape, now became the focus of the author's attention. In order to investigate this, the author decided to concentrate on the process of job modification. A study investigating job modifications is reported in the next chapter (7) and then in Chapter 8 the author specifies the operational characteristics for an acceptable job design methodology.

Chapter 7

CHAPTER 7

STUDIES OF JOB MODIFICATION AND THE PERFORMANCE OF DIFFERENT TYPES OF ORGANISATIONS

Introduction

In this chapter are described one major and one supplementary study conducted by the author. The purpose of these studies included:

1. (i) An investigation of the process of job modification, so as to be able to define the characteristics which a job design methodology (the process) should possess.

   (ii) An investigation of the process of job modification, so as to be able to suggest how the process of job design should be applied.

2. An investigation to ascertain whether support for the concept of the measures on the quality of the design of the job could be found in practice. This was done by finding out how often these measures were used as reasons for job modification. It was felt that the frequency with which these measures were thus used would indicate their importance to job design.

3. An investigation, in respect of a small number of primitives, mentioned in job design work, or organisational behaviour texts, as having implications for job design, and their relationship with the measures on the quality of the design of a job.

4. An investigation of the links, if any, between organisation types, as delineated in Chapter 6, and a small number of organisational variables related to events, circumstances and states surrounding assignment to positions.

Item 4 above required a pre-classification of data and thus needed more data than was required for the other three purposes. To facilitate this a supplementary study was conducted in which only data relevant to the fourth of the stated purposes was collected.

7.1. The process of change

Job redesign is a job modification process, and most job modifications will induce changes in the design of the job. However, job design should be a directed job modification process in the sense that both the purpose, and the product of modifications should be improvement in the fit at the individual/organisation interface. If job redesign is to be effective it must be initiated with respect to a specific set of jobs which constitute the focus of attention. Once jobs are designed they should be monitored for the effect on them of organisational modifications - and these modifications could either be those purposely undertaken or organically occurring as will be explained presently.

Eventually, any organisational change process has the potential to effect modification to the design of some jobs. Moreover, practically any organisational strategy for coping with change has also the potential of influencing, determining and effecting the designs of jobs within that organisation.

Changes in the organisation could be analysed as intentional or repercussive. Intentional changes would be those that are undertaken to effect certain specific alignments; repercussive changes are those that arise secondary to the intended changes - and these latter changes may be beneficial or adverse.

A good analogy for illustrating the difference between the intentional, or desired, changes and those that are repercussive is that of medical treatment. In medical practice the patient is often monitored by adverse reactions. The purpose of monitoring could be regarded as ensuring that the secondary effects - the adverse conditions - do not dominate, i.e. the benefits, if not the sole occurrence, are greater than the adverse effects. The intention of medical treatment remains the curing or prevention of disease.

The sources of the reasons for change have often been analysed as internal or external to the organisation.

The external reasons for internal organisational change are reflected in Child (1972A) when he writes:

> "A number of writers have arrived at the same broad conclusion that the higher the environmental variability and the uncertainty consequently experienced, the more the prevailing structure of organisation <u>should</u> be adaptive, with roles subject to continued redefinition".

Here Child could be regarded as subscribing to the inevitability of external change impinging upon, and inducing changes internal to, the organisation so much so that he argues for absorbtion mechanisms to be built into the organisation. Child's use of the word 'structure' seems unfortunate for the concept of structure held by him, and following the Aston Group tradition (see Pugh, Hickson, Hining and Turner (1973)), covers a large number of aspects including:

1. Structure of activity (functional specialisation, role specialisation, and formalisation).
2. Concentration of authority (concentration of authority, autonomy of the organisation, standardisation of procedures).
3. Line control of work flow (subordinate ratio, formalisation of role performance, recording, percentage of work flow superordinates).

Schlesinger (1979), while supportive of what has been stated above, also takes the view that environmental changes precipitate reactionary changes within the organisation. He writes:

> ".... most companies or divisions of major corporations find that they must undertake moderate organisational changes at least once a year and major changes every four or five years".

Essentially, the external reasons for internal change relate to, as is discussed in Chapter 4, technological innovation, product demand and availability of raw materials. Many researchers have carried this argument, albeit from different perspectives, and the works of Child and of Schlesinger are only examples of this viewpoint.

The reasons for change residing within the organisations have to do with events like retirements, new entrants (at any level of the organisation and not only at the bottom) and re-assignments. These concern individual style (see Gellerman (1976)) and the presence or absence of functional specialism within groups, especially of new appointees, to senior levels of the hierarchy, who are changed as necessary not on account of currently occurring external changes but because they either view the current internal working as non-optimal, or because of personal views rooted in functional specialism and past experience.

In the context of internal changes must also be mentioned individuals, at all levels of the organisation, pro-actively attempting to design their own jobs.

For example, Webber (1976) advising aspirants on career management suggests:

> "Don't be trapped by formal, narrow job descriptions. Move outside them and prove the limits of your influence".

Whether through such advice or on their own accord, some individuals have been observed to be doing just that (see Strauss (1962), Stewart (1976)). To the extent that this exploration of the 'job boundaries' involves the creation of boundaries that suit the particular individual or the extent to which that individual is able to push these boundaries to suit himself, may lead to job erosion for members of the role set. On the other hand this re-definition of the boundaries has also the potential of creating complements.

The changes of the kind discussed above, with the exception of the last item, are not primarily concerned with the design of the job, but they have the potential to affect the design of specific jobs and the effect may be beneficial, inconsequential or adverse. Unless effort is made, firstly, to monitor and evaluate the ensuing effects on the design of jobs, and, secondly, simultaneously controlling for and progressing design orientated changes, some jobs may be left design-eroded.

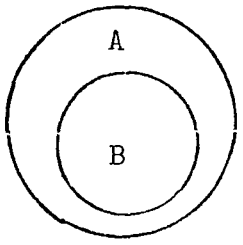
The discussion so far in this section has dealt with organisational changes affecting the ambient quality of the design of one or more specific jobs. But some jobs may be ill-designed to start off with. The process of change, of course, works on both the ill designed and well designed jobs; for either ambient design structural and other changes, not being specifically directed at the design of all the jobs, could modify the design of some jobs for better or for worse.

The indefinite, and sometimes deleterious, effects on the design of jobs arising from organisational change is attributed to political behaviour by Kotler and Schlisinger (1979), who write:

> "Political behaviour sometimes emerges before and during organisational change efforts when 'what is in the best interest of one individual or group is not in the best interests of the total organisation or of other individuals and groups'".

The work reported in this chapter started off with the wish of the author to research the modification effects of organisational change processes on the

design of jobs. While developing the idea, modification to as well as enlargement of, the basic concepts were found desirable. Figure 7.1 is a diagrammatic representation of the difference between the processes of job modification and job redesign.



Area A denotes job modification effects;
Area B denotes job design effects

Figure 7.1: Job Modification and Job Design

That differentiation between the processes of job modification and job redesign is a current problem in this area is evident from the research by Birchall and Wild (1975). These researchers conducted a survey to find out the extent of activity ("number of exercises") in the area of job design. They found it difficult to determine criteria on whether a job modification exercise were in fact a job design exercise. They solved the problem as follows:

> "For the purpose of this article we shall refer to 'exercises' and consider as relevant any exercises which gave rise to the existence of jobs which differ from those replaced or those existing in similar circumstances".

Given the arguments presented earlier - modifications could affect jobs adversely or beneficially - it would be legitimate to surmise that the conclusion reached by Birchall and Wild may have been weakened by the use of the classification strategy adopted. However, the purpose here of discussing the above referenced work of Birchall and Wild is simply to indicate the presence of a problem - that of differentiating between the process of job modification and job design.

The task of differentiating between job design and job modification is rendered more difficult because, as reported by Hayes (1977), often the reasons for the invocation of either process are the same.

In terms of the diagram of Figure 7.1, the idea incipient to the studies was the exploration of the effects of job modification on the design of the job. Before detailing the augmentations to the basic idea, the concept of modification required definition, and this will be presented.

7.1.1. The scope of modifications

From the above exposition it should be clear that the author was interested in modifications to jobs whilst the incumbent remained in place. The first requirement for the study turned out to be an operational method of differentiating between job modification and job change.

Words like 'modification' and 'change', in normal everyday usage are synonmously portrayed. Both the words denote the translation from one state to another. For the purpose of this chapter it was expedient to define job change because this concept was later used to exclude certain potential participants to the study. A job was considered to be changed when it changed with respect to any of the following items:

1. The hierarchical level of the position
2. Title of position
3. Person to whom the job holder reports

It should be clear that this is an operational definition. The author recognised the rather artificial nature of this definition and was aware of the possibility that the content and context of jobs might not be modified by changes in one or more of the above items. However, the purpose of this definition was to exclude from participation individuals involved in organisational events associated with these three items. Thus, the concept the author associates with the third item requires statement, and will be explained with reference to the diagram of Figure 7.2.

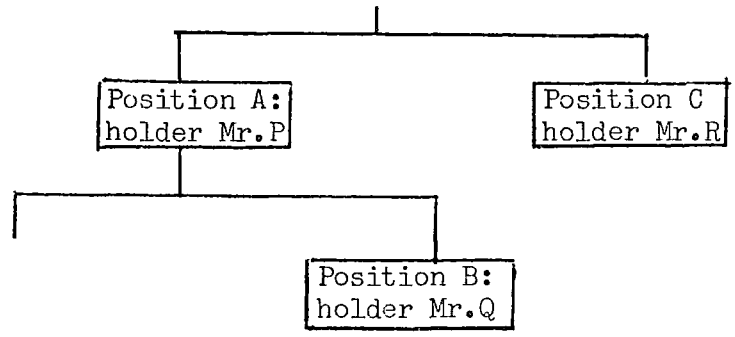


Figure 7.2: Explanation for change of 'Person to whom the job holder reports'

In this diagram A, B and C are three positions held respectively by Mr. P, Mr. Q and Mr. R. If incumbent Q remains in position B while a new person, say Mr. S, comes to occupy position A, then this would not be a case of job change. However, if B leaves this sub-hierarchy, and starts reporting to Mr. C, then this would be the case of job change. The extreme case of the last stated situation would be B leaving the organisation and joining some other company.

Note that the process and event of job change, as discussed here, is linkable to the concept of organisational use of recruitment/assignment, as a method for creating a fit at the individual/organisation interface, that was discussed in Chapter 6.

It has already been stated that the author was attempting an operational definition of job change. For the concept under discussion no standard definition could be found. Bishop and Hill (1971) also had to adopt an operational definition, for their study on job changes; but this latter definition could not be adopted here. The adopted operation definition, discussed above, served the study well and was well accepted by the various people involved in the studies.

The purpose of the main study being to explore effects on jobs of organisational efforts to adapt to changing situations, it was decided that the purpose could be better served by admitting to the study only those participants who had remained in position for at least two years - for in this way modification to the quality of the design could be investigated. Thus modifications which could be classified as job change, e.g. re-assignment, job rotation, etc., were intentionally excluded. However, if job rotation was initiated so that a group of people (reporting to a specific boss) who earlier had done work on the basis of allocation of tasks through splitting of group work but now undertook the group work on the basis of task rotation while the group as a whole maintained their relationship with the boss (or new boss) were included.

An investigation into the effects on the quality of the design of the jobs resulting from the organisational effort to create alignments in the face of internal and external changes would have to consider the rate of change itself. This is discussed under the next sub-heading.

7.1.2. Slow or abrupt changes and adaptation to change

Changes can take place in an abrupt manner or occur slowly over time. The slow process of change could be visualised as organic; happening all the time, under the surface as it were. The total effect of all the minute changes would be cumulative. Mechanisms to cope with change are usually of the adpative feedback loop type, i.e. they work on tolerance. For example, a heating control mechanism designed to maintain temperature at 20° C will work on a feedback loop tolerance of, say, ±1°C. Effectively this means that if the temperature goes above 21°C the heating is shut off while, if it falls below 19°C, the heating is turned on again. The ±1°C in this example is a function of the sensitivity of the responding mechanism. Greater sensitivity in the responding mechanism would permit tuning with greater precision, say 0.5°C, and lesser sensitivity would make the apparatus adjustable to grosser values, say 2°C. From the example, the important thing to note is that while the changes in temperature occur in a continuous manner and the monitoring is thus continuous, the adaptive adjustments are periodic and a function of inherent sensitivity possessed by the mechanism.

Organisational changes and ensuing adjustments, it could be postulated, follow a similar model. The adaptation to change may, however, look sudden even when the necessity for realignment has been building up over time. More likely, it is to be the case of slow change and relatively abrupt adaptation to change. On the other hand, the adaptation itself may be piecemeal, i.e. gross changes necessary, but introduced a piece at a time.

That adaptation to change need not always be of the kind requiring treatment but may in fact involve taking advantage of opportunities offered, as well as the fact that some degree of adaptation will amost always be necessary has been well argued elsewhere (see Ansoff (1975) and Brown, Gay and MacMillan (1979)).

In the above presentation attempt has been made to differentiate between change and adaptation to change. The way the argument relates to jobs is that jobs keep getting modified over time, to the extent that the incumbent's intercourse with his work role set demands; but all the modifications have periodically to be given recognition and legitimisation.

One approach to the process of legitimisation is to visualise that changes, big or small, as they occur are recognised, negotiated and legitimised. In

this chapter the author is more concerned with recognition and legitimisation than with how frequently the process of legitimisation was invoked and conducted In terms of the temperature control analogy, presented earlier, more frequent recourse to legitimisation would imply a greater level of sensitivity whereas less frequent recourse would be indicative of a lesser degree of sensitivity. Nevertheless, it is not only a matter of sensitivity but also a matter of the rate of change itself, for the speed of change itself will also be a major determinant of the required frequency of adjustment (see Woodward (1965), Lawrence and Lorsch (1969)). Further, it is emphasised that the processes of negotiation and legitimisation may not always lead to outcomes considered desirable by specific job holders.

During the 'ideas development' phase of the studies reported in this chapter, contacts were made with Industry Training Board advisers. The experience of the Training Board advisers was that not all modifications to jobs are preceded by negotiations to which the job holder is a party. The implication of this is that senior management inform the individuals (who are themselves managers) on behavioural outcomes expected of them.

Given the above perspectives, and by way of summarisation, jobs were considered to be modified as follows:

(i) Directives from above
(ii) Negotiations involving the boss only
(iii) Negotiations involving the role-set (including or excluding the boss)
(iv) Self-willed modifications, without negotiations with role-set.

The individual and modifications to job

There is some evidence in literature that some individuals manifest behaviour indicative of dislike for change. Often it is not that change, per se, is disliked but that the perceived reasons for change make the manifest changes suspect. Kotler and Schlisinger (1979) list four main reasons for resistance to change:

1. A desire not to lose something of value.
2. A misunderstanding of the change and its implication.
3. A belief that the change does not make sense for the organisation.
4. A low tolerance for change.

To the extent that measurements on the quality of the design of the job are based on the experience-in-job of the position incumbent, it therefore is necessary not only that the changes introduced be appropriate but that the process through which these are introduced be facilitative of removing some or more of the above reasons for resistance. Lack of effort at removal of resistance, or riding rough shod over it, create psychological ill effects on individuals according to Bartolome and Evans (1979) who write:

> "Reorganisation and restructuring of companies have become almost annual events; and sudden policy changes have vast repercussions on peoples lives that create worries and preoccupations and lead to emotional spillover".

7.1.3. Overview and summary

The diagram of Figure 7.3 presents the job situation investigated in the main study, analysed in terms of the initial or ambient fit at the individual/organisation interface.

		Jobs modified		
		improved	unchanged	worsened
Initial fit	Good	-	-	C_2
	Bad	-	C_1	C_3

Figure 7.3: Complementary studies, analysed in terms of the ambient fit

Situations marked as C_1, C_2 and C_3 would be of special concern.

To summarise the above, assignments to positions produce a certain fit at the individual/organisation interface; this initial fit itself may be good, indifferent or bad; changes within and outwith the organisation may or may not affect the design of specific jobs; if the design is affected it may be improved, remain unchanged or become worse. Period over which modifications were considered was two years; jobs were considered to be modified if either the job holder or his boss considered them to have undergone modifications. The main study involved asking position incumbents whose jobs were modified to describe the process of modification, the substantive element of modification and the regression of this modification on the quality of the design of the jobs. Queries on circumstances surrounding initial position occupation, besides being put to

the main study participants, were put to a further group of individuals in the supplementary study.

7.2. Participation: sample sizes

Under this heading the subject will be discussed at two levels:

- The level of the organisation
- The level of the individual

7.2.1. Participating organisations

The survey into managerial job design practices had indicated the possibility of the following classifications for organisations.

1. Those that design jobs according to corporate policies - the corporate type.
2. Those in which unit heads develop their own unitwide methods and systems for designing jobs - the unit type.
3. Those in which each individual manager fulfils his own job design responsibilities without reference to unit or corporate levels - the ad hoc type.

One of the purposes of the main study, as well as the total purpose of the supplementary study, being the investigation of differences between these organisation types on their attempt at achieving integration of the individual with respect to assignment to position, it was part of the study design consideration to recruit to the study organisations distinguishable on the above classification.

It was decided to recruit approximately one hundred participants for the purpose of investigating job modification - the study of the purpose, the substance and job design implications of job modification. However, as the investigation into the relationship between the type of organisation and the characteristic ways by which it attempted to achieve the position - assignment - balance called for a pre-classification, it was decided that for this part of the inquiry the number of respondents required would be twice the earlier stated number, i.e. the number of respondents needed for this part would be around 200.

From the foregoing criteria and conditions for recruitment at organisational level as well as at the level of the individual were set as:

1. The respondents must come from those organisations which could be classified according to the above scheme.
2. At least a hundred of the respondents must have had their jobs modified within the last two years.

To fulfil the above conditions, at least three organisations had to be recruited; one of each of the above listed types. The adaptation of 3-organisation

strategy, however, would have required that each organisation contribute 66 participants. Increasing the number of organisations implied the requirement of average number of participants from each could be correspondingly relaxed.

The final decision on number of organisations was to recruit 6-10 organisations with at least 2 of each type. In the recruitment of organisations it was foreseen that each organisation would be asked to contribute:

1. Around 15 respondents whose jobs had been modified in accordance with the 2 year criteria. These respondents would be called upon to complete the full study questionnaire.
2. Around 15 respondents whose jobs had not been modified over the last two years, and who would be completing the supplementary data questionnaire.

Contacts with the Training Board advisers, mentioned earlier, produced not only valuable advice in questionnaire design, but also help in the conduct of studies as well as, and perhaps this was the biggest contribution of these Training Board advisers, in the recruitment of organisations.

Notwithstanding the recruitment help provided by the Training Board advisers, 'cold-start' recruitment was necessary. Appendix 7.1 contains the specimen letter sent out to a number of organisations during the organisation recruitment phase. From Levine and Gordon (1978) it could be interpreted that endorsement helps elicit higher acceptance rates. So in the letter were presented not only the author's own credentials but reference was made to the involvement of the author's supervisor; moreover, an open offer was made of possible future co-operation with the Business School. This was done to create an image, as well as to reflect the reality of Business School interest in the study. It should also be clear from the letter that organisational participation was sought on the basis of mutual interest: they were promised results from the studies. The presentation of these results were to take the following form:

1. Data from within each organisation, preserving the anonymity of the respondents.
2. Data from other participating organisations, preserving the anonymity of the source organisation.

Altogether 9 organisations joined the study. Appendix 7.2 lists these organisa-

tions. From each organisation respondents contributed to both studies; some (those whose jobs had been modified) to the main study and some others (those whose jobs had not been modified) to the supplementary study. To preserve anonymity mentioned in 2. above, organisations were allocated a Greek letter code. Each organisation contributed respondents more or less in proportion to its size. Appendix 7.3 shows, in tabular form, the number of respondents who completed the research instruments from each organisation.

The recruitment seeking letters were addressed to the Personnel/Training/Development Directors/Managers. Whether the introduction was acquired through Training Board advisers or through the recruitment seeking letter, discussions involving not only the Personnel/Training/Development executives but also heads of operating units were held to determine the 'type' for each organisation, i.e. whether the organisations were to be classified as of 'corporate type' or of 'unit type' or of 'ad hoc type'. The diagram of Figure 7.4 shows the split, by type, for the 9 organisations participating in the study.

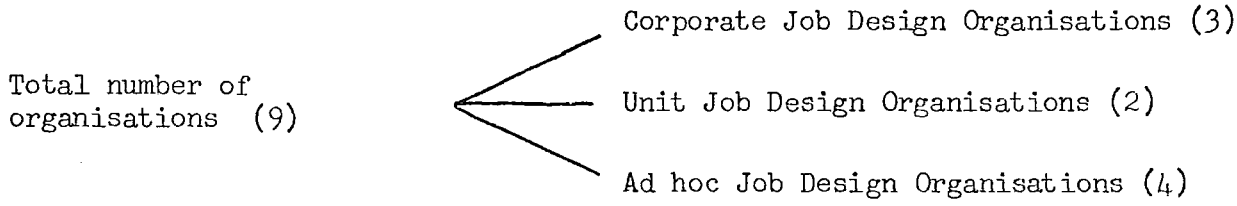


Figure 7.4: Classification of participating organisations according to type of job design pursued

Post Script. To expedite the study, the recruitment seeking invitations were simultaneously sent out to a large number of organisations. During negotiations it transpired that some organisations wanted more than twice the required number of their members to participate. This was accepted. For study-report purposes recruitment was stopped after the acceptance of the first nine. However, a tenth organisation, John Player and Sons, did join the study at their request under an informal arrangement - they could have the other results but results from their data would neither be given to other organisations nor included in the thesis.

7.2.2. Participating individuals

The agreement with the operating unit heads led, in each organisation, to

the nomination of a 'study co-ordinator'. The unit heads decided which individuals within their organisations had had job modifications and which not. Each study co-ordinator, with help from the unit heads, compiled two lists of names of individuals who would be invited to participate in the research. One of the lists enumerated those whose jobs had been modified and the other contained names of individuals whose jobs had not been modified. The individuals invited to participate in the study were in 'grandfather' or 'father' type of relationship with the operating-unit heads mentioned earlier.

7.2.3. The conduct of the study

Each study co-ordinator was supplied with research material which consisted of:

1. Required number of copies of the two types of questionnaire.
2. Required number of author addressed envelopes.

Adhesive labels were stuck on the front cover of each questionnaire copy. On these adhesive labels was hand-written the Greek letter code signifying the organisation in which the particular copy was to be used. Further, the questionnaire copies were serially numbered, in the bottom left hand corner. This numbering followed a structured system: a three digit code with the first digit signifying the organisation; the next two digits denoted questionnaire copy number within each organisation, e.g. the organisation OMEGA having been assigned the one digit code 5, the questionnaire copies, of either type, for use in OMEGA were numbered 501, 502, 503, etc.

The study co-ordinators noted the questionnaire copy number, discussed above, on to the lists of potential participants prepared earlier with the co-operation of unit heads. The study co-ordinators posted (internal post) to each potential participant:

1. A copy of the relevant questionnaire.
2. An author addressed envelope.
3. A covering letter explaining the study and inviting the recipient to contribute to it.

The covering letter was in each instance signed by a high company executive, and endeavoured to explain the potential gains to the participant himself and to the organisation. As participation was voluntary, the letter attempted to convey organisational sponsorship for the research project. Longworth (1953) reports

that sponsorship image helps arouse interest and thence may be factors contributing to increased rates of questionnaire completion.

The letter also stressed the confidentiality on the data provided by individual participants and, it was hoped, the provision of author addressed envelopes for the return of the completed questionnaires would underpin and reinforce the statements on confidentiality.

Appendix 7.4 shows an example of the covering letter used by one organisation. Appendices 7.5 and 7.6 present the questionnaire used in the study.

The questionnaire copy numbers of the completed forms when they arrived at the Business School, were then compiled into lists, this time by the author. Every two or three days, the author telephoned the study co-ordinators to inform them of the questionnaires he had received from each of their organisations. The study co-ordinators checked off their own lists. By this method the study co-ordinators and the author were able to keep a good check on completion rates. After an initial period of two weeks the co-ordinator telephoned all the individuals to whom he had sent the questionnaire but whose completed copies had not reached the author. A second and final reminder was issued at the end of the third week. Between organisations there were variations on the following overall rates of return:

Before reminder	42%
After first reminder	53%
After third reminder	59%

The basis of individual participation to the studies being voluntary, each study co-ordinator compiled lists and sent invitations to participate to twice the number of people needed from each organisation. Given the above quoted response rates, the total number of completed questionnaires was above the minimum limit set for the study. For comparison purposes only, in his study of difficulties and distastes of managers, Pincus (1967) achieved an overall response rate of 56%. Pincus's study was organised somewhat similarly to these complementary studies in that the goodwill of seniors was acquired but the completion of the questionnaires was undertaken on a voluntary basis by their subordinates.

Identity of respondents

The organisation of the studies as explained in the foregoing ensured that the identity of the respondents with respect to the responses they gave would remain secret from their employing organisation, but, and at the same time, it was possible for the researcher to link completed questionnaires to the respondents. The organisation of the studies thus - the author knowing who gave what responses - was undertaken for the reason discussed under the next sub-heading. However, note that given the amount of data generated, interview findings on this aspect are not discussed in the presentation of data.

7.2.3. Measurement of modifications

As far as the description of substantive modifications was concerned, the primary interest lay in the amount of increase or decrease along given descriptive constructs. This information could be, and in fact was, elicited from the respondents by supplying scales, marked from -3, through 0, to +3, for the respondents to indicate changes produced by modifications. However, a little reflection will indicate that useful as the information collected by this method may be, its completeness and hence its utility could be extended if the ambient value with respect to which changes took place were known.

To put the problem in another way, the author regarded measurement of change to be a two parameter problem: description of the situation before and after the modifications. If the before and after measures, on any construct, are known then the degree of change can be computed by simple manipulation, and yet at the same time reference (ambient) value may reflect the nature of change.

The research instrument used in the pilot study was based on two parameter response for each construct. The pilot study participants and the Industrial Training Board advisers, who helped in the study, found the research instrument cumbersome, heavy going and taking too much time for completion.

As a consequence of experience gained in the pilot study, it was therefore decided to ask the respondents to describe only the modifications. The intention was that for those constructs which in the course of study assumed focal importance selective interviews with the participants would be used to acquire

the additional - ambient value - data. Further discussion on the topic of measurement is presented later under the heading 'Individual Interpretation of Scales', Section 7.

7.3. The development of the questionnaire

The nature of the 'unknowns' addressed in this research can be classified into the following three types:

1. Circumstances at the time of position occupation.
2. Triggers, processes and rationale of job modifications.
3. Substantive descriptions of job modification and the induced effects of these modifications on the quality of the design of the job.

Henceforth the main study will be referred to as Study A and the supplementary study as Study B. Study A addressed all the three types of unknown listed above; Study B was directed at only the first.

In presenting the material in this section references to the item number in the questionnaire are given. To do this the following strategy has been adopted. Material will be presented variable at a time and within brackets, against the variable name, will be given question numbers which elicited data on that variable. Examples of this format would be Age (Q1), Sex (Q2), etc. The notation just suggested would apply to cases where Q1 and Q2 refer to the same variable in both Study A and Study B. Where the same variable is introduced in different positions in the two studies, references will be as shown below:

Hierarchical level (A - Q4; B - Q3)

The above example shows that data on hierarchical level of the respondents is elicited in question number 4 in Study A and question number 3 in Study B.

Before introducing the research queries typified above, will be presented a short discussion on a set of 'Demographic' variables on which data was also collected. Essentially demographic data was collected to facilitate cross-checking for emerging peculiarities in the data, i.e. respondents for an organisation relatively old, while from another predominantly young; in one organisation respondents being mostly female while in another being mostly male; etc., etc. Given that the intended purpose of collecting data on these variables was not research directed, no analysis of this data will be presented. Nevertheless, given that data on these variables was collected and given that great selectivity, based on relevance to job design, was exercised in the choice of the five demographic variables for which data was gathered each of these will be briefly discussed from the job design perspective.

7.3.1. Demographic variables

Age (Q1) has been found to be linked with a large number of job related variables. The link with productivity has been most exhaustively studied by Lehman (see Roe (1956)). Lehman compiled data on 'superior contribution' as a function of the age of the contributor, for a large number of job groups. Herzberg, et al (1957) found some evidence to indicate that job satisfaction tends to increase with age but is not linearly correlated with it. One of the more abiding concerns to today's organisations, as discussed in Chapter 1, is the shift in societal paradigm: the younger people, unlike their fathers, do not appear to respond to prestigious titles and money - these younger people place premium value on recognition and responsibility. Diamond (1969) found more than three quarters of the organisations in his survey to be involved in restructuring so as to give the younger manager an opportunity to demonstrate his ability.

Saleh and Otis (1964) found support for the hypothesis that managerial employees in the age group 60-65 find less satisfaction in their work. This result would support the earlier findings of Herzberg and his colleagues. The explanation for this, formulated by Saleh and Otis, is insightful. They opine that the drop in overall satisfaction for the older managerial employee might lie in the fact that in those cases where earlier satisfaction is work related, satisfaction will tend to fall as the employer will pass over long-term and more innovative projects to younger people. Another possible explanation could be that as the focus of interest shifts to things to be undertaken after retirement, interest in employment work wanes, and this leads to lowering of satisfaction.

The attitude of older persons is also likely to be different from that of the younger person with regard to adaptation to change, new methods of work and new environment to work. Further, Schein (1978) discusses the relationship of age with individual commitment to jobs. Commitment is possibly a surrogate or intervening variable to the degree one wishes to contribute to organisational purpose.

Age, thus, could be regarded as an important explanatory variable for the way an individual might choose to describe modifications to his job, in terms of how he sees the modifications affecting the quality of the design of the job.

Sex (Q2) as an explanatory variable for differences in productivity and satisfaction is well established (Myers (1964)). Some of the widely reported studies on job design had female job incumbents; a strong criticism of job design has alluded to this aspect of job design implementation (Banks (1974)). The source of Banks' criticism could be stated as:

> "Since men and women prefer different things in a job, and given that a large number of successful job design studies have included largely females, job design can only produce outcomes desired by females."

The area of sex related preferences for job characteristics is, however, one of high current activity with no firm conclusions in sight: Schuler (1975) and Bartol (1976) provide evidence for there being such differences while Brief and Aldag (1975) and Brief and Oliver (1976) produce equally strong evidence for there being no such differences.

This variable was included to test, if the sample of respondents permitted, whether males and females described the modifications to their job, as reflected on the quality of the design of the job measures in consistently different ways.

Length of service with current employer (A - Q3)

If a careers perspective to the design of jobs is taken, then the length of service becomes an important variable. Schein (1971) builds a three dimensional model of careers within organisations. The model is represented by a conical shape, as in Figure 7.5. The three dimensions of the model are Function, Rank and Inclusion or Centrality. Length of service is associated with movement towards the centre:

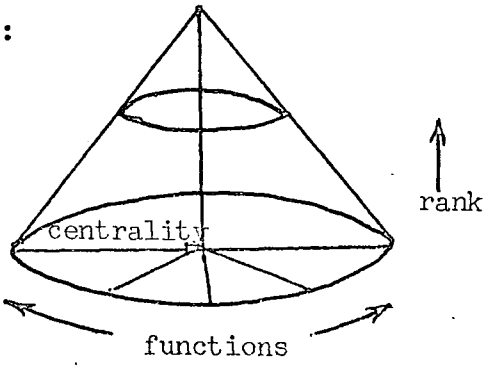


Figure 7.5: Schein's Careers Perspective

In the words of Schein:

> "A third, more subtle dimension, involves movement towards the inner circle or the core of the occupation or organisation. As a person learns more, comes to be trusted by the older members of the occupation or organisation, earns tenure and acquires responsibility, he or she is, in effect, moving towards the core of the organisation along an inclusion or membership dimension. Usually movements up the hierarchy and movement in towards the centre are somewhat correlated but it is quite possible for a person to remain at a given hierarchical level, yet become more central and included as he or she acquires experience and is trusted more. It is also possible to move up and still remain at the periphery, as is nicely captured in the phrase 'being kicked upstairs'".

This career growth should then evidence a greater congruence towards the merging of individual and organisational goals, and would influence the job holder's perspective on the design of his own job.

Hierarchical level (A - Q4; B - Q3)

The nature of work differs between the various hierarchical levels (Anthony (1965), Mintzberg (1973)). This led the author to question whether the introduction of specific types of modification, through association with higher level activity, would be regarded, and therefore be described by the respondents, as effecting overall improvements in the quality of the design of the job.

Function (A - Q5; B - Q4)

Shartle (1949) in an interim report on the Ohio Leadership Studies observed differences in work patterns with respect to position occupation in different functions. Hickson et al (1971) suggests that:

1. Different groups acquire power on the basis of their ability to reduce uncertainty.
2. Particular groups acquire power over other groups through creating relationships which reduces the other groups to mere dependencies.

Functional specialism is often a basis of power. An organisation may become known to be 'marketing orientated' whereas another is supposed to be 'production orientated'. Whereas with respect to environment these orientations are a source of externally exercised power, internal to the organisation membership of these functional groups would act as source of personal influence.

Mumford (1972) found computer specialists to experience a sense of power because of their functional activity. Stewart (1976) found job holders in

functional groupings to have different degrees of choice, have different constraints on them, and have different demands on them.

The above referenced research reports prompted the author to collect data on functional specialisms of the study participants. The aim here was to find out, with respect to those constructs which in the course of the study assume importance, whether preferences as shown by the measures on the quality of the design of the job are function specific.

7.3.2. Research questions

7.3.2.1. Circumstances of position occupation

There is a dearth of literature on how individuals come to occupy the positions they do. Most researchers either assume the man in position and report findings post facto to his assignment or, as commented by Buchanan (1979), have devoted themselves to analysing how the assignment 'should be made'. How, in fact, it takes place in an ongoing organisation remains somewhat of a mystery. The anthropological perspective is brought to bear on an aspect of the circumstances of position occupation by Dalton (1959), who enumerates the following reasons for placement:

1. The position may be a reward for someone who has served long and well but has 'got out of step' and is unlikely in the balance of his career to 'make an adjustment'.
2. Sometimes rather than have an able and ambitious person leave, the office is temporarily given to him in lieu of a higher rung until he can be better placed.
3. As training ground and observation post.
4. Berth for amiable misfits.
5. A seasoned older person who is really counsellor to a young or new executive until he learns the ropes.

That a particular assignment may not be for positive reasons or grounds has been alluded to in the reference from Schein (1971), to the concept of being "kicked upstairs". The concept of assignment as a punishment is currently being researched by Arvey and Ivencevich (1980). It does not require much imagination to perceive of the possible outcome for a young subaltern caught engaged in socially unacceptable behaviour; appointment to a tough or hazardous position.

Other possible reasons, some along the lines of the above, could be:

1. Ability (fitness), either absolute or relative, to do the job.
2. The only 'spare' person available getting assigned to the job.
3. The person volunteered himself for the position.
4. The individual getting elected to do the job.

The above scenario has been built to point out how very little is available in research based publications on this single, but basic, aspect of jobs.

Obviously, the grounds for assignment to a position circumscribe, in a manner, to the freedom within which jobs can be designed with or without the contrivance of others. Although the field of circumstances of position occupation could be described as wide open for research effort, in the course of the studies reported here data was collected on only a limited set of those variables which impinge directly on the design of jobs. These variables will now be briefly discussed.

7.3.2.1.1. Length of position occupation (A - Q6; B - Q5).

Most theories of job design, presented in Chapter 5, depict variety as an important feature of the design of a job. Discussion on the topic is often based on cycle time of activities undertaken. Managerial jobs often have a six-monthly or yearly cycle time - budgets, accounts, holidays, promotion lists, annual bonus, etc. That aspect of variety of concern lies in the nature of problems tackled remaining invariant. The stimulus becomes stale and the excitement generated by novelty is lost. It is in this context that Boyce (1973) suggests that when organisations are unable to promote people, attempt should be made at job rotation. Change of scene is supposed to provide the stimulation necessary for alertness and prevents individuals falling into psychological stupor through lack of variety.

Some organisations have already adopted personal policies where individual job holders are frequently shifted (Braiden (1978)). As yet, no mean time for job shifts has been determined but Braiden (1980) is of the opinion that for a large percentage of the population "every three years" might be a good yardstick. A caveat on individual differences is in order: a blanket policy of

shifting people around may not be the solution; individual need for stimulation through variety differs; some individuals might only be able to contribute by remaining in position for considerably more or somewhat less periods of stay in a given position.

Discussing the subject of length of position occupation, Bartolome and Evans (1980) write:

> "Staying in a job for too long can transform enjoyment into boredom; persons can be competent but see what they do as predictable variations of a humdrum theme".

Others may discern from performance and ambience whether or not a certain individual is in the 'stimulation rut'; but only the job holder through his own experience-in-job can say whether or not he has begun to feel lack of stimulation.

Creation of position currently occupied (A - Q7; B - Q6)

Bennison (1979) gives twelve circumstances grouped into four categories which affect career structures through position creation, closure and under conditions of job mobility. Two of these categories, having to do with creation or demise of positions together with the subclasses within each are:

1. Change in size of an organisation
   - 1.1 Rapid expansion
   - 1.2 Steady contraction
   - 1.3 Differences in short and long term expansion/contraction plans
2. Internal reorganisation
   - 2.1 Change in the number of levels
   - 2.2 Change in skill requirements
   - 2.3 Improvements in career prospects of a specific category of employee.

The effect of these, and such, conditions on the design of jobs has, however, not been reported in literature and may not have been researched. Conjectural supposition, based on supporting evidence from literature could, nevertheless, be taken and used for explanation of results. The reason for collecting data on this variable is to conduct exploratory research to investigate any associations between this and other job design variables so as to posit hypothesis.

Learning about, for, upon and on the new job

Respondents were asked five separate questions on facets of integration with the new position, through learning about the position. These five items will now be discussed, under this common sub-heading.

7.3.2.1.2. Career plans (A -Q11; B - Q10)

That organisations, even when they plan careers, do not disclose these plans to the individuals who are the subject of these plans came out in the survey reported in Chapter 6. Literature evidence on secrecy comes from Beckhard (1977) who also narrates the kinds of difficulties this non-disclosure can cause, at the time of appointment. The formulation of the question in this study was to find the extent to which individuals were told, after the event as it were, that the appointment was part of some career plan for them. For even knowing at the time of the appointment that the current move is according to some plan may reduce some uncertainty for some and help them to envisage and prepare for the next possible moves in their careers.

Van Maanen (1977) begins his essay on careers and socialisation with the sentence:

"People will not accept uncertainty".

If the assumption that people join organisations to pursue careers rather than work for the day, month or year, could be justified, then it stands to reason that they would appreciate knowing whether a given job move is in accordance with some plan, whether it is happenstance or organisational expediency that leads them there. And this assumption gains support from the work of Burack and Miller (1976) who report:

".... employees want meaningful career planning programs".

7.3.2.1.3. Training prior to job assignment (A - Q12; B - Q11)

If manpower planning is to work, career planning and succession planning, which are sub-processes within this broad field, should ensure that the person concerned receives some form of exposure to the type of job he might be asked to do at some future date in time. That such preparation could be achieved by such specific exposure-giving methods as job rotation, job change, attendance at courses, has been suggested by various authorities such as Stolz (1966) and Pitts (1977).

Data was collected both for the primary purpose of ascertaining experience-in-job and secondary desire to attempt to link this data with the description of the design of the job as suggested either through the modifications made or sought

7.3.2.1.4. Knowledge prior to assignment on the nature of the current job (A - Q13; B - Q12)

Training, as discussed in the preceding paragraph, would be:

1. Organised by the employing enterprise.
2. Acquired by the individual while working with the same enterprise but prior to his current appointment.

The possibility, therefore, exists that although the individual may have acquired knowledge about the new job either through his own efforts or have received training while in the employment of some other enterprise. Given that the basis of successful job match would be the possession of knowledge by the new assignee, it was decided to find out directly the extent to which individuals possessed knowledge about their job at the time of their appointment.

7.3.2.1.5. Content and execution of new job

Respondents were asked to describe how, at the time of position takeover, they learned of the job contents and organisationally preferred methods of execution. Two questions were set for this purpose: was was directed solely at incumbents who took over positions being vacated; the applicability of the second question was more general and extended to those taking up newly created positions as well.

Given that role understanding has been abstracted by many researchers (e.g. role perception by Mumford (1972); role ambiguity by Kahn (1964), see Katz and Kahn (1966)) to affect job execution and further found, by still other researchers (e.g. Bandura and Walters (1963), see Brown (1965)) to affect learning which in turn moderates performance, organisations would be expected to do all within their means to ensure that new incumbents acquire a clear understanding of the role expectations they (the organisation) hold of them (the new incumbents). Note that Kahn takes a broader view of role ambiguity in that to him it comprises:

1. Lack of information regarding supervisory evaluation of one's work.
2. Opportunity for advancement.
3. Scope for responsibility.
4. Expectations of role senders.

In the current discussion, focus is on items 1, 3 and 4 from Kahn's above list; item 2 has been dealt with earlier (under career plans).

The crux of the matter is this: the role-set of the individual about to occupy a position, already have some preconceived notions on what he must do in terms of producing outputs, accepting inputs and transformations to be undertaken by him. If the position under discussion were already in existence, the role-set expectations are derived from, and related to, their experience of work with the previous occupier. On the other hand, when the position is new, the implication is not that therole-set has no expectation; rather, the mere fact that the position was created would suggest that the role-set (and/or those responsible for the creation of the position) have some preconceived notions on what they would regard as successful, or unsuccessful, performance.

The author did not find any hard data on how organisations attempt to impart understanding of job execution to newly assigned incumbents. The two specific questions on learning the content and execution of jobs will now be presented.

7.3.2.1.6. Handover period (A - Q8; B - Q7)

Where the appointment is to a position which already existed but is becoming vacant due to job mobility of the outgoing occupier, a period of overlap - where both the outgoing and incoming incumbents are present at the same time - may be one method of initiating the new arrival into the job.

In organisations where, and in circumstances in which, handover periods exist, the length of the handover period would be an important variable. The parameters determining the ideal length of the handover may be, among others, the complexity of the task, the state of preparedness of the new arrival, and the pressure on the outgoing person to be away.

The research interest in positing this question lay in finding out the frequency of the use of handover periods; the relationship of the use of this method with the hierarchical levels of the positions for which this method was being used; possible relationship of the use of this method with the functional classification of jobs.

7.3.2.1.7. Actual method of learning role demands (A - Q14; B - Q13)

Given that handover periods can only be arranged under specific circumstances, which may not always obtain, a general, open ended, question was set to find out from the respondents the particular method which stood them in coming to grips, i.e. discovering, learning, about the contents and executions of their jobs.

This completes the discussion on the five items on learning for, about and on the new job.

7.3.2.1.8. Modifications to job description at position takeover (A - Q15; B - Q14)

As this item deals directly with job modification, albeit with reference to a specific time, the discussion is at some length.

Roe (1956) in her discourse on individual differences writes:

> "The individuals in any group or organisation have both similarities and diversities. No two individuals, even in the same species, are ever exactly alike. No matter how small the unit of population there is variation among its members".

Although individual differences have been recognised for a long time, the models of behaviour (as discussed in Chapter 2) until recently failed to incorporate known differences in their generalisations. In this section individual difference, and the implication of these differences to the design of jobs, will be discussed from two perspectives - the psychological and the technical.

Given that managerial jobs are highly interlinked and work can only be accomplished through group effort and also given that no one individual is a clone of another, a reasonable deduction would be that organisations would not attempt to slot persons into positions, as if the humans were modular and interchangeable. Modularity, in hard and soft engineering, has many advantages - the malfunctioning/defective part can be replaced by a functioning replacement of the same genere. But humans are not automata. The problems arising in situations of finding replacements, in the organisational setting, will become clear in the following text.

A possible framework for analysing the 'incumbent replacement situation' is shown in the diagram of Figure 7.6 where the analysis is in terms of, on one

hand how well the outgoing incumbent was integrated into the work group but, on the other hand, whether changes in the work procedures, methods, etc. are desired. In the diagram the four cells are marked A, B, C and D to help discussion.

Status of integration of outgoing incumbent	Desirability of change	
	Change wanted	Change not wanted
Well integrated	A	B
Not integrated	C	D

Figure 7.6: A framework for analysing 'incumbent replacement situation'

To fill a vacancy arising in the circumstances depicted by cell A, and armed with the foreknowledge of the current human inability to form clones. it could be stated that some group pattern adjustment would be necessary in order to create the conditions of balance previously present. The new balance will, of course, be different from the previous one.

The statements of the foregoing paragraph do not, by any means, deny human power of accommodation and resilience to accept new conditions. Rather, the argument suggests the necessity for this. Neither does the argument represent an attempt to absolve the recruiters from their responsibility of choosing a candidate that would best fit into the roles-constellation (for the concept of 'role constellation' see Hodgson et al (1965)).

The "interaction chronograph" developed by Chapple (1949) was discussed in Chapter 3. Chapple and Sayles (1961), later, suggested that one possible use of this chronograph would be the prevention of assignment problems which arise:

> ".... because the manager does not possess the personality characteristics to do the particular job as it is set up, even though he may otherwise be a capable individual".

For the current analysis the focal words are .... "job as it is set up".

The above analysis is based on psychological considerations which more often imply 'how' rather than 'what', so next attention will be directed to the 'what' part.

The diagram of Figure 7.7 depicts an organigram of an hypothetical sub-organisation.

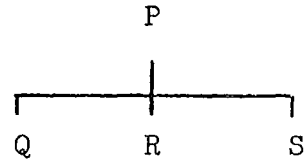


Figure 7.7: A sub-organisation consisting of 4 individuals where P is the boss of the other three

Assume the organigram to depict the following functional set-up:

Position P = Director of Management Services
Position Q = Manager, Computer Services Section
Position R = Manager, Operational Research Section
Position S = Manager, Experimental Design & Statistical Evaluation Section

Further, assume that P's functional specialism prior to his appointment as Director was operational research. Now, if P's position becomes vacant (for whatsoever reasons), and one of P's former subordinates, say Q, is appointed to the Directorship, then the nature of jobs will change not only for R but also for those holding positions R and S, as well as for the individual who might come to occupy position Q. The specialism of the new director being computer science whereas the outgoing director specialised in operational research, the linkages necessary between the Director and Section Managers are bound to be different.

A conclusion from the above two strands of argument would be that not only are adjustments necessary from the psychological viewpoint but also from the work demands perspective.

With respect to Figure 7.6, only the situation described by cell A has been discussed. Somewhat similar analysis could be followed through for situations described in cells B, C and D. However, the arguments developed in any discussion based on cells B, C and D could only have a reinforcing value to the main theme developed in the course of discussing cell A. The matter will, therefore, not be pursued any further.

The discussion above shows the pertinency and necessity of modifications to

jobs at the time of appointment. However, no research data is available on how often, at what hierarchical level, with respect to what functions, this is in fact done. Primary data was therefore collected, to be able to answer these queries.

7.3.2.1.9. Status of, and source of recruitment to, position

Two questions to elicit this information were set in the questionnaire. These questions were essentially set for further, in-depth, analysis with respect to other queries on circumstances of position occupation that have already been discussed.

The two questions posited related to:

Newly created or vacated position (A - Q7: B - Q6)

The method of recruitment/appointment to position (A - Q9: B - Q8)

The kind of secondary analyses foreseen were:

- Does external recruitment necessitate, or newly created precipitate, internal adjustments of the kind discussed in connection with job modifications at appointment?
- How often is the placement through election rather than through the recruitment-appointment process?
- Are appointments to newly created positions from external recruitment more likely to remain in position?

Of course, along with the above type of queries was ever present the consideration as to whether the conditions would regress on job design as reflected in the quality of the design of the job descriptions - as related to modifications made or sought.

In addition to the above stated reason - secondary analysis - for collecting this data, there are grounds which suggest the importance of this data, to job design, in its own right.

For manpower planning to be of any utility, organisations should be able to predict future manpower requirements and prepare, through training, people to occupy the new jobs. The intention is not to convey that organisations needing new know-how should not recruit from outside, but simply that outside recruitment for all new positions should not be an automatic choice.

frequency of outside recruitment for newly created positions could not be located, it was accepted that the generation of this information would be enough, prima facie, justification.

7.3.3. The process and rationale of job modifications

Reading of organisational literature leads invariably and inexorably to the conviction that, over time, jobs are modified. Starting with the premise that jobs are modified leads to the conclusion that the internal or external characteristics of the jobs - the design of the job - undergo changes in loading. These changes, as discussed earlier in this chapter, would call for recognition and legitimisation. The process and rationale of modifications to jobs has, however, not been examined and scrutinised by job design researchers. One of the three purposes of the studies reported in this chapter was to investigate the process and rationale of job modification.

7.3.3.1. Events preceding and reasons for job modifications

Historians often deal with events and discuss the causes for these events; but these antecedent conditions are often themselves the outcomes of previous events. While discussing goals many researchers (e.g. Wafford et al (1977)) suggest the perspective of the "means-ends" chains. In this perspective modifications to a job could be taken as an event in itself or, from a time transcending and event including viewpoint, as a process which either improves the chances of goal achievement (where the goal remains unchanged) or directs effort to new goals. Figure 7.8 gives a diagrammatic rendering to job modification within the means-ends perspective discussed above.

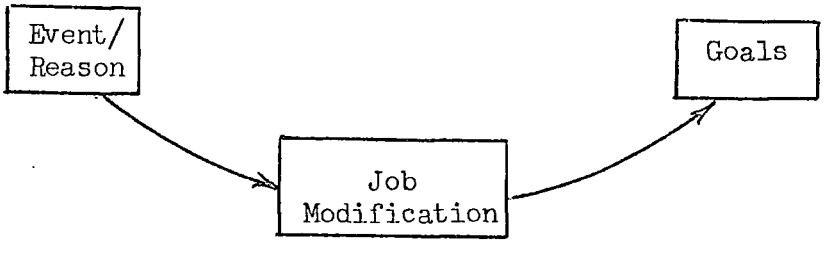


Figure 7.8: Job modification in the context of means-ends chain

The respondents were asked to make:

Statements descriptive of the events, reasons and consideration that led to job modification (A - Q16)

With respect to the diagram of Figure 7.9 note that

1. An event may change certain earlier existing conditions in such a way that earlier goals are not modified. Here job modifications come about through the incorporation of opportunities/constraints which the new situation may present/impose.
2. An event may be a change in outlook leading to the re-evaluation of goals, conditions or of both simultaneously.

7.3.3.2. Process of job modifications

Davis (1957) referring to job design as "the activity" writes:

> "Insufficient data are available to permit management to make a decision concerning where, how and by whom the activity is to be performed. Decisions concerning this are fundamental to the structural design and operation of the entire organisation.
> Additionally, the question is raised as to when and to what extent correction of job design should be undertaken, and who in the organisation should be concerned with the activity ...."

Although the reference is dated, matters have not become any clearer over the intervening period. In the same publication, a little later, Davis even proposed a strategy for coming to grips with the stated problem. He wrote:

> "Another approach that needs to be pursued bears upon current job design methods and is concerned with the investigation and evaluation of the job design process. This extension of an initial study previously undertaken would be concerned with the identification of methods of job design, responsibility for the design process, method of installation of job design, process decision variables, and a study of the designs in use ..."

The study reported could be regarded as evolving from the cue given in the above quotation. Current literature is rich in reports of how particular job design exercises or experiments were conducted (narratives of the experimental process); but how the managerial job gets redesigned within working organisations has not been reported. Even the available reports of the conduct of experiments have been criticised for their bad documentation by Clegg (1978) who on the basis of his own research, referring to the content and detail of published material, writes:

> "Unfortunately, such details often go unreported and when they are presented, descriptions are apt to be specific and rather haphazard in their coverage".

The above, of course, is a reiteration of the author's own, above-stated, views

based on literature reviews. So, as the reports in literature are reports of outside, (i.e. researcher,) intervention the reality of job design process as it affects and gives form to jobs, given the negative evidence of being unreported, could be regarded as unresearched.

The specific aspects of the process of modifications on which respondents were asked to give primary data will now be briefly discussed.

Initiators of, and participants to, the actual process of job modification (A - Q17)

Influence exercised by members of the role-set in the daily functioning of managerial position holders is indirectly reported by many, e.g. Stewart (1976) and Mintzberg (1978). The Hodgson et al (1965) study on the 'executive role constellation' could be interpreted as showing the all-pervading influences, in moulding the design of jobs, by the role-set.

A question was therefore set to elicit information, specific to the process of modification, on who initiated and who participated in determining the modifications to the respondent's jobs. Further, the respondents were asked to indicate on a five point scale, the degree of influence exercised by these participants. The responses elicited to the above question would describe what actually happened. This naturally raises queries on what might or should have happened. The respondents were, therefore, asked to describe, according to their experience-in-job, how the process of modification should have been conducted. Towards this end, three leading and one descriptive questions were posited. The leading questions were based on whether it would have been advantageous to the respondents had:

1. The process been initiated by somebody other than the one(s) who in fact did the initiation (A - Q18i).
2. The participants to modifications been different from those who participated (A - Q18ii).
3. The degree of influence exercised by the participants been different to that that they did exercise (A - Q18iii).

Following the three questions based onthe above concepts, the respondents were requested to describe the modification process - initiation, participation

and influence exercised - that according to their experience-in-job would have been ideal.

Inherent in the thread of argument that led to the positing of the above question is the concept that influence exercised by others could be analysed in terms of 'what was' and 'what should have been'. In Chapter 3 are presented research findings suggesting that members of the role set differently removed from the job holder held different views on his performance. This, logically extended to the purposes of this study, could imply that the state of appropriateness of the mistakes or influence exerter may determine whether jobs are beneficially or detrimentally modified.

Next, the respondents were asked to describe whether as a consequence of the introduction of modifications to their own jobs, other jobs had to be adjusted or modified.

Effect of modifications to one job on other jobs

At this point in the writing, it is worth repeating the conceptualisation central to the studies being reported. Job (re-) design is job modification but all job modifications may not be directed to the design of the job.

In job design, theory and practice, the 'unit of analysis' is currently a major area of concern. The unit of analysis problem arises from the inter-connected nature of jobs. Schappe (1974) discusses the interdependent nature of jobs; the complexity in analysis that this interdependency begets and finally the difficulties that this complexity presents to job designers. Kelly (1979) discusses some consequences of job redesign arising from inter-connectedness of jobs.

Analysed from a purely systems perspective, the introduction of modification to one job, which itself is enmeshed in the mosaic of other jobs, is likely to lead to modifications in these other jobs. The nature and degree of adjustments in the surrounding jobs would depend on, among other parameters, not only the situation prior to the design effort but also on the degree and nature of change injected into the focal job. With respect to this focal job, the repercussionary changes may be either material, i.e.

modifications in the elements of their jobs, or psychological. Bishop and Hill (1971) discuss the psychological dimension vis-a-vis the non-manipulated jobs.

At the core of the unit of analysis problem are the following concepts:

1. When does a job modifications intervention become a job design exercise?
2. What is the basic unit of measurement in job design studies?

The two core concepts will now be elaborated briefly.

Earlier job design experiments, see Chapter 5, invariably involved taking elements of the higher (often supervisory) jobs and including these in the jobs being redesigned. It could therefore be posited that in job design, while some jobs may be improved, some others may be eroded (see Novara (1973)). In the extreme cases there has also been some job loss (Kelly (1979)). The total effect, comparing on the one hand, the improvements on some jobs with either the erosion or disappearance of some others, on the other hand, has led to conclusions of the type:

"Overall job design does not improve anything"

The ingredients of the second argument, wholly present in Chapter 5, have essentially to do with whether the design effort concentrates on 'the group', as in the Tavistock tradition or on the individual jobs, as in the Herzberg and Hackman and Oldham systems.

Respondents to the studies whose jobs had been modified were asked to

Describe the effects on other jobs as a consequence of modifications to their jobs (A - Q19)

The respondents were asked to describe the relationship of the other jobs consequently affected, the number of jobs affected, and whether these latter jobs were consequently re-designed.

7.3.3.3. Rationale of modifications to jobs

Four leading questions were asked to ascertain the existence, and given the existence the extent of success, of job re-design effort and practice in the organisations taking part in the study. The leading questions were followed by an open ended question asking respondents to describe the rationale in a way that would facilitate evaluation of the degree of success in practice. The four leading questions directed attention to:

1. Whether jobs similar to the respondents' had previously been modified along more or less the same lines as his own job (A - Q20i).
2. Whether it was envisaged that jobs somewhat similar to the respondents' would be modified as a consequence of experience gained in the course of modifications to the respondents' job (A - Q20ii).
3. Whether the modifications to the respondents' job, or those described in 1 or 2 above, were in pursuance of an organisational level job design policy (A - (Q20iii).
4. Whether the respondents were aware of the overall reasons why and in what way their jobs had been modified, i.e. the overall achievements of the modification process (A - Q21a).

7.3.4. Descriptions of the substantive modifications effected

Chapters 2 to 5 introduced many constructs that various authorities, theoreticians or empiricists, have found to affect, directly or through mediation, performance or satisfaction of job holders. As the possible number, and types of, characterisations are essentially limitless, the author as a consequence of collecting a vast number of such characteristics during the survey of job design practices (itself reported in Chapter 6), arrived at the concept of the quality of the design of the job as a possible measure for evaluating both existing designs and the effects of modifications introduced. Importantly, the basis of this measure is its foundation on the concept of job as an individual/organisation interface.

The respondents were asked to describe the modifications made to their jobs (A - Q22 to Q26).

For these questionnaire items, some of the more common job characterisations, essentially those culled from the analysis of key literature presented in Chapters 2 to 5 or those collected in the survey on job design practices (presented in Chapter 6), were listed; the respondents were to regard these characteristics as primitives or parameters to define the modifications (real or desired) to their jobs. Additionally, open spaces were provided for the respondents to insert the primitives of their own choice, i.e. descriptors of modification uniquely applicable to each specific situation.

For each primitive used by a respondent to describe the substantive modification to his job he was asked to map the effect of the change on that primitive onto the measures of the quality of the design of the job. By way of recapitulation, the measures of the quality of the design of a job, as discussed in Chapter 6, are:

1. Contribution to organisational purpose
2. Utilisation of potential
3. Job satisfaction

In the design of the study, then, as described above, the three measures on the quality of the design of the job were held to be independent, orthogonal variables; all the other characteristics were treated as independent variables. The studies as described above imply a causal link chain between the primitives and measures. Before discussing the primitives provided for the description of the modifications some elaboration on this aspect of conceptualisation as well as the scales of measurement would be in order.

7.3.5. Linkage in variables

In discussions on cause and effect, social science debate often degenerates to the proverbial incapacity to state whether the chicken or the egg comes first: in discussions on two variables this almost invariably happens. The resolution of such disputes often calls for the introduction of intermediary variables to explain the underlying relationships, as will be done in the Heuristics study reported in Chapter 10. Note that even here the relationships can only be discussed in terms of 'influence outcomes' for the variables under discussion and the discerned relationships are in terms of statistical aggregates.

Already discussed in Chapters 2 and 5 is the Kornhauser (1965) conceptualisation of linkages, between constructs, requiring a four-way classification of variables.

Stimulus condition Perception Affective Response Behavioural Response.

While, at the conceptual level, the author holds the Kornhauser model to be a powerful abstraction, the following two cautionary notes are made:

1. The model depicted four state linkage in an assumed limitation; i.e. it is neither clear as to whether a 5 state model might not be more powerful; nor

is it made explicit under what conditions a three state model would suffice.

2. In practice it becomes exceedingly difficult to classify words according to preconceived schemes. Even an attempt at classification of a relatively short list, of say 25 constructs relating to experience-in-job, according to the Kornhauser four state model will bring out the inherent difficulties.

In terms of the Kornhauser model, the studies reported in this chapter:

1. Used the multi-dimensional concept of the quality of the design of the job at the level of the affective response. Note that the three dimensions of the measure were regarded as simultaneous outcomes.
2. The primitives denoting modification were treated as belonging to the states preceding the affective response state but these preceding states were themselves left undifferentiated.

To summarise the above arguments, the author having defined the measures on the quality of the design of the job (in Chapter 6), posited these measures as the affective response under investigation; job characteristics found, by other researchers, were used firstly to describe the modifications to jobs and secondly to transform these descriptions to variations in the domain of affective response.

7.3.6. Individual interpretation of scales

In field research, not only in social science but also in biological science, where objective criteria for evaluating effect are not possible, subjective criteria are often accepted and used. For elaboration, an analogy from clinical trials (in medicine) will be pursued.

When an analgesic is being tested for efficiency the situation described in the following is faced.

Since the threshold of pain tolerance is an individual characteristic, a person may be really experiencing severe pain and yet dourly/stoically articulate his experience as "suffering from some pain"; on the other hand, another person with substantially less pain (all this if pain were objectively measurable!) may take to bed amid cries for help to relieve his suffering. The picture just described pertains to the situation before the administration of the trial drug. For the after-the-administration values of pain subjectivity re-enters the evaluative criteria and method. For the moment disregarding the placebo

effect, the degree of relief experienced would be narrated, depending on the personality, in a fashion corresponding with the initial articulation.

However, since the purpose of the clinical trial is the measurement of pain relief, related to the drug, individual differences of scale interpretation as well as the initial values of pain are ignored in the evaluation of efficacy. Pain relief being the difference in measures of pain before and after the administration of the drug, a fall in pain from, say, 3 units to 1 unit is treated the same as a fall from 2 units to 0 unit.

The point of presenting the above analogy is that an investigation into job design involves tapping the experience-in-job, the type of variables being focussed upon are of individual perception and thresholds of stimulation type. Note, however, that whereas these subjective variables relate directly to the design of the job, objective measures, whatever these might be, can only provide reinforcing evidence on conclusions that may be drawn from the study of these variables alone.

The respondents were provided 7-point scales for indicating the degree of modification along the primitives as well as for showing the induced changes on the three constructs of affective response. As the use of 7-point scales is discussed in Chapter 6, and can be found in most standard texts, e.g. Oppenheim (1978/1966), further discussion is not pursued.

A point pertinent to the current discussion would be that the measuring scales were calibrated for recording either positive or negative changes: the middle point was marked 0 and three points each were provided for indicating increases, or decreases, respectively, along both the predicting primitives and the measures of affective response.

This concludes the discussion on the two topics, linkage of variables and individual interpretation of scales, that was necessary prior to focussing on the primitives of job design themselves. It is to these that attention will now be focussed.

7.3.7. <u>The primitives of job design</u>

That it is difficult to choose and define significant job characteristics in a clear and unequivocal way is accepted by most authorities (see Blackler and

Brown (1975), McLean and Simms (1978) and Buchanan (1979)). That respondents were provided with a list of primitives and asked to add primitives applicable to their own particular job modification case, has been stated earlier. The question, currently being addressed to is: How was the list of primitives provided to the respondents compiled? Given that the number of primitives to choose from, i.e. the base, is vast, the following three criteria were discriminatingly used.

Literature concensus. This criterion was negatively applied: the absence of literature consensus was used to discard a characteristic from the study. An example of a variable discarded on these grounds would be variety. Although job design content theories have successively utilised this concept, the author's reading into the nature of managerial job led him to conclude that, by and large, managerial jobs have sufficient variety and that variety can, in specific instances, be dysfunctional through fragmenting the span of attention. The work of Cooper (1974), which was referenced in Chapter 5, could be interpreted as a compelling argument for relegating variety to the position of the least important design construct for higher level jobs.

Dispension of concepts. While in the English language the number of perfect synonyms is limited, the richness of the language provides many words which differ in the underlying concept only marginally. This has led to a profusion of verbiage. Banks (1974) takes to task the mushrooming of terminology. In this discussion a good example would be the Herzbergian concept of 'autonomy', which is also used in the Hackman and Oldham job design technique. Cooper, in his work referenced in the foregoing paragraph, uses the concept of 'discretion' as an important job design variable. The author found the concept of 'authority' being discussed by many authorities in managerial literature, e.g. W. Brown (1971), Newman and Rowbottom (1973/1968), in terms which make it more or less akin either to 'autonomy' or 'discretion'. Given the above stated situation, with reference to the three variables discussed, it was decided to include only 'authority' on the list provided to the respondents. In this instance the author's choice would get support from statements on managerial reading habits. While Stewart (1969) opines that managers do not read much, Mintzberg (1973)

suggests that when managers take part in research they respond in a way reflecting the readings undertaken. From this, the author reasoned as follows. Given that for reading-managers the choice of materials is more likely to be catholic general management - rather than specific - job design, and the non-reading managers would be equally placed with respect to the use of any of the alternatives; the use of the word 'authority' would have greater overall understanding and acceptance than either of the alternative word formulations.

Personal choice. This thesis is concerned with the building and testing of a wholistic theory of job design. Readings in the existing theories of job design and existing empirical findings in organisation literature, specifically organisation behaviour, clearly indicated that some constructs that would be of direct relevance to the wholistic theory had never been tested in job design experiment or discussed in job design literature. Such constructs as

- fairness in demands made on the individual
- help received from members of the role set
- keeping of promises made to individuals

although, on prima facie grounds, closely related to the individual's experience-in-job, have not been thoroughly,(or even roughly), tested in job design research

Dunham (1977) affirms this lack of rigour in existing work and suggests one such untested variable in the following quote:

> "For the most part, theorists, researchers and even practitioners have overlooked some potentially important factors that may be affected by job re-design .... it is obvious that if the job is changed, the staffing requirements are also changed".

In the same publication, besides other variables not included in reports so far, Dunham also remarks on the omission of compensation requirements in application of job design.

A number of such constructs, all derivable from the discussions in Chapters 2 to 6, were posited as a result of the author's own choice. Although the discussion of the method of choice for the primitives supplied to the respondents concludes herewith, a caveat would be in order: the respondents were told that they could add characteristics, and ample space was provided for the addition of any number of primitives that they might find applicable in the description of their particular case.

7.3.8. The listed primitives

The primitives provided to the respondents are, more or less in their entirety, those which have either been mentioned by other researchers as job design characteristics or are derivable from the various evidences and discussions that have been presented in Chapters 1-6 of the thesis. Therefore, so as to avoid repetition, in this section the discussion will be limited by the following two criteria:

1. For topics already discussed, only new evidence from literature.
2. For topics not already covered, a discussion at sufficient length together with, where possible, support from literature.

The conceptualisation of variables

It has been often enough stated that the basis of job design are the experience-in-job variables. Figure 7.9 shows the schemata of the author's conceptualisation of these variables. Figure 7.10 lists some of these variables; the reference numbers in this figure link the listed variables to the schemata. Only those variables presented by the author to the respondents are listed.

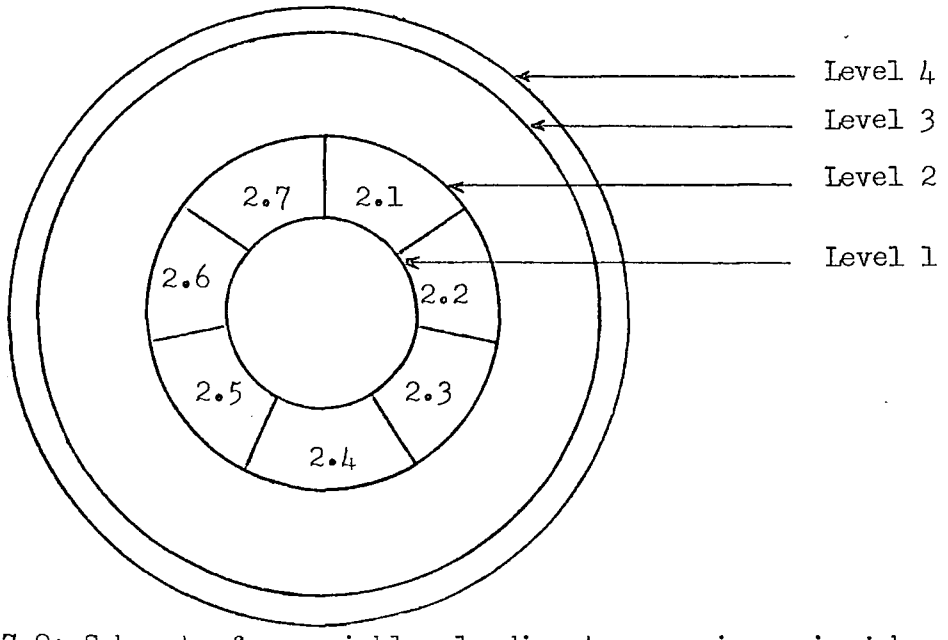


Figure 7.9: Schemata for variables leading to experience-in-job

The diagram of Figure 7.9 shows the variables to be at four levels, which could be labelled as:

Level 1 - Experience-in-job
Level 2 - Central job dimensions leading to experience-in-job
Level 3 - Resource determinants of core job dimensions
Level 4 - Organisational determinants of resources

Level 1	Level 2	Level 3	Level 4
- conflict/harmony	1. Elements of work	- Number of sub-ordinates	- Authority
- confidence/doubt	2. Ability demands of job	- Budget levels/ systems	- Responsibility
- involvement/ separateness	3. Personal assessment of job	- Machinery/ plant/buildings	- Rules and regulations
- stress/exhilaration	4. Elements of work opportunity	- Information	- Rewards
- fairness/partiality	5. Personal opportunity in work	- Future opportunities	
- control/helplessness	6. Elements of work process		
- relationship/ alienation	7. Nature of work		
- ownership/disdain			

Figure 7.10: Categories within the schemata of Figure 7.9

Note that with respect to level 2, the itemisation in the table of Figure 7.10, only gives the titles of dimensions. The job design primitives of these dimensions are given in Figure 7.11. The concentric circles conceptualisation, in essence, then, reflects that while at the core, or innermost circle, lie the variables of experience-in-job themselves, these are reflections of the central dimension of the job itself; the central job dimensions are regulated by the level 3 variables which have been labelled the 'resources determinants;' the resource determinants themselves, in turn, are influenced by the level of authority, responsibility and the rules and regulations in existence at any one time.

Note that in the above presentation, the primitives are given in a conceptually linked way; in the questionnaire, however, these were presented to the respondents in an order other than this conceptual linkage one.

1. Elements of work
   - 1.1. - motivating staff
   - 1.2. - supervising staff work
   - 1.3. - co-ordination

2. Ability demands of job
   - 2.1. - Demands for new ideas
   - 2.2. - Skill level demands
   - 2.3. - Technical level demands

3. Personal assessment of job
   - 3.1. - Amount of non-routine work
   - 3.2. - Job holder interest in element of work
   - 3.3. - Status of job

4. Elements of work opportunity
   - 4.1. - Choice in what to do
   - 4.2. - Choice in timing of execution
   - 4.3. - Choice in order of execution

5. Personal opportunity in work
   - 5.1. - Exercise of influence
   - 5.2. - Participation
   - 5.3. - To learn and develop
   - 5.4. - To use judgement
   - 5.5. - To represent others

6. Elements of work process
   - 6.1. - Feedback on performance
   - 6.2. - Interaction with others

7. Nature of work
   - 7.1. - Amount of travel
   - 7.2. - Conflicting demands
   - 7.3. - Choice of work colleagues
   - 7.4. - Confidential element in job
   - 7.5. - Quality of interpersonal relationships
   - 7.6. - Pressure to meet deadlines
   - 7.7. - Exposure of work
   - 7.8. - Amount of uncertainty
   - 7.9. - Help from role set

Figure 7.11: Job design primitives within the dimensions of job

7.3.9. Culled primitives for describing the modifications and for measuring the changes in the quality of the design of the job

The table of Figure 7.12 presents, in a summary, some of the literature evidence on the variables that were offered to the respondents for describing the modification to the jobs, and regarded as independent variables changes along which would induce changes in the quality of the design of the job. The variables included in this table are either directly discussed by the authorities to whose work references are given, or are operational derivatives of the concepts germane to the quoted references. Note that the summary style of presentation is adopted as the concepts have had introduction in the material of Chapters 2 to 6. Further note that the references provided are by no means exhaustive either in terms of the literature as a whole or in terms of the material in Chapters 2 to 6.

Variable	References
-Outputs, qualitative -Outputs, quantitative	Davis (1966); Birchall (1975)
-Inputs, qualitative -Inputs, quantitative	Scholefield (1968); Chapter 6 results
-Number of subordinates	Brech (1960); Pugh et al (1973)
-Resources available	Jenkins, Nadler, Lawler and Cammann (1975)
-Representing the view of others	Mintzberg (1973)
-Generating and developing new ways of doing things	Scholefield (1968)
-Opportunity to use judgement	Morse and Wagner (1978)
-Confidential elements in the job	Schein (1978)
-Interaction with other departments inside the organisation	Chapple and Sayles (1961)
-Interaction with individuals/groups outwith the organisation	Wellin (1978)
-Amount of non-routine work	Boyce (1973)
-Choice in work undertaken -Choice in methods of execution -Choice in sequence of execution	Stewart (1976)
-Skills required to do the job	Walker et al (1975)
-Feedback on performance	Greenberg (1977); Cummings and Schwab (1978)
-Pressure to meet deadlines	Jenkins et al (1975)
-Help from boss -Help from subordinates -Help from colleagues	Likert (1967); Carey (1972)
-Rules and regulations	Baker and Hansen (1975)
-Co-ordination	Wellin (1978)
-Supervising the work of others	Hemphill (1967)
-Motivating others	Morse and Wagner (1978); Birchall and Hammond (1978A)
-Information needed to do the job	Higgins (1976)
-Conflict experienced at work	Carson (1972)
-Financial rewards	Locke, Sirota and Wolfson (1976)
-Status of job	Argyris (1973)
-Technical knowledge required at work	Saunders (1956)
-Authority	Bensahel (1977)
-Responsibility	Herzberg (1968)
-Number of people supplying inputs -Number of people receiving outputs	Machin (1979)

Figure 7.12: Job primitives provided to respondents

Variable	References
-Influence exercised with respect to boss -Influence exercised with respect to colleagues -Influence exercised with respect to subordinates	Kotter (1977) Machin and Kokkalis (1978A); (1978B)
-Choice of working colleagues	Dalton (1959)
-Influence on appointment of colleagues	Brown (1971)
-Amount of travelling	Cooper and Marshall (1978)
-Amount of uncertainty	Galbraith (1973)
-Job holder level of confidence	Bensahel (1977)
-Sense of job ownership	Reynolds (1972); Gyllenhammer (1977)
-Stress experienced in work performance	Crisp (1978)
-Opportunities for recognition	Maslow (1943)
-Opportunities for promotion	Elbing (1978)
-Opportunities for learning and development	Emery (1963)
-Opportunities to help others	Schein (1978)
-Fairness in the demands on job holder	Hackman and Lawler (1971)
-Job interest in elements of own job	Rowntree-Mackintosh (1978) Gyllenhammer (1977)
-Quality of interpersonal relationships	Dalton (1959)
-Agreements with providers of inputs -Agreements with receivers of outputs	Machin (1977)

Figure 7.12 (Contd.): Job primitives provided to respondents

7.4. Results from the studies

The results presented in this section are exploratory analyses of raw data. As in the area of job design no wholistic theory exists, and specifically managerial job design has not been focussed upon, no real/meaningful hypothesis could be formulated. Facing a similar situation, although in another context, House, Filley and Gujarati (1971) discussing analysis of data, they collected, wrote:

> "These analyses are viewed as exploratory rather than tests of hypothesis because there is neither previous research nor theory to suggest specific hypothesis to be tested".

Within the context of exploration, the particular research tradition pursued has previously been followed by other researchers, e.g. Raia (1965). In fact Raia (1965) describes the analysis framework so well that a quotation from him will be used to depict it:

> ".... primarily concerned with discovering the association of certain variables rather than in proving causuality".

In the analysis of data in the complementary studies, then, the focus of attention was the associations between the various variables describing job modifications, and the variables of interest to the wholistic theory of job design.

The analysis of data will be presented according to the following headings:

- Circumstances of position occupation
- The process (triggers and rationale) of job modification
- Variables for description, and measuring the effects, of modification

Each of the above listed headings has a sub-section devoted to it. These will now be presented.

7.4.1. Circumstances of position occupation

Data collected from 10 questions put to the respondents will be discussed here. Differences stemming from the following sources:

1. Job design practices in the organisations (ad hoc, unit, and corporate)
2. Jobs modified or not modified

provide the two strategies for discussions on the 10 questionnaire items to be presented here.

7.4.1.1. State of position at time of appointment

A vacancy arises. An individual is appointed to the position. On the other hand, an individual might be there and a position may have to be created or vacated to accommodate him.

The 233 respondents gave, between them, 11 types of responses, of which the following five:

(i) Created to meet legislation

(ii) Created to facilitate the entry into the form of an outside individual who had impressed the boss.

(iii) Created to enhance control.

(iv) Vacated - previous occupier relieved of position.

(v) Vacated - death of previous occupier.

were mentioned only once each. The table of Figure 7.13 shows the response data collected for types of responses mentioned more than once.

Status of position	Organisation type according to job design practice					
	Ad hoc		Unit		Corporate	
	JM	JNM	JM	JNM	JM	JNM
1. Newly created due to						
(i) Expansion	3	4	2	3	6	9
(ii) Restructuring	18	11	12	4	16	10
2. Vacated due to previous occupier						
(iii) Receiving promotion	9	11	3	5	14	13
(iv) Changing organisation (leaving)	4	15	5	7	7	7
(v) Changing job within company	6	6	2	1	1	3
(vi) Retiring	-	2	-	2	6	4
Columns totals	40	49	24	22	50	46
	89		46		96	

Figure 7.13: Responses on the state of position at appointment

Figure 7.14 shows the above data summarised according to organisation type and whether the position was newly created or vacated. This data suggests that there is no difference between the organisation types, i.e. positions get created and vacated at the same rate within the three types of organisations.

	Ad hoc	Unit	Corporate	Row totals
Newly created	36 (37.8)	21 (19.5)	41 (40.73)	98
Vacated	53 (51.24)	25 (26.48)	55 (55.27)	133
Column totals	89	46	96	231

Figure 7.14: Data on status of position, arranged according to organisation type

However, further analysis of the 'vacated' class of positions is possible and presented here for the three variables: previous incumbent leaving the organisation, previous incumbent changing jobs within the organisation and the previous occupier retiring from the organisation. These comparisons are in terms of the frequency ratio within a specific class of organisation type.

(i) Previous occupier leaving the organisation

Ad hoc	19/89	= 0.21
Unit	12/46	= 0.26
Corporate	14/96	= 0.15

Here the largest contrast is between the unit and corporate types of organisation.

(ii) Previous occupier moving to another job (not a promotion) within the organisation

Ad hoc	12/89	= 0.13
Unit	3/46	= 0.07
Corporate	4/96	= 0.04

This data, thus, suggests that changing and swapping jobs occurs mostly in the ad hoc type of organisation; in fact in such organisations it is more than three times as likely to occur as in the corporate type of organisations where this happens the least. The unit type of organisation falls between the extremes of ad hoc and corporate.

(iii) Previous occupier retiring from position

Ad hoc	2/89	= 0.02
Unit	2/46	= 0.04
Corporate	14/96	= 0.15

The data thus suggests that there is a 15% probability that a position vacated in a corporate type of organisation is due to the retirement

of the incumbent. In the ad hoc type of organisation the corresponding value being 2%, the likelihood of vacation of position through retirement is less than 1/7 of that of the corporate type. The position of the unit type of organisation, on this variable, is between the extreme set by the corporate and ad hoc types.

7.4.1.2. Status of appointee

A vacancy arises. An individual gets appointed to the position. On the other hand because of his personal merits an individual may be invited to join an organisation, in which case a special position may be created to accommodate the incomer. The analysis here is of circumstances, of the appointee, in which the assignments to the positions were made in the three types of organisations.

The 233 respondents gave betweenthem 10 types of responses, of which 5 were mentioned less than 10 times each. These infrequently mentioned responses are listed below, where the numbers in brackets show the frequency of response occurrence.

(i) Externally invited on personal basis (4)
(ii) Speculative letter to group general manager (1)
(iii) Relative working in company provides facilitative introduction (1)

Note the above three response types are those where an external individual joins an organisation. The next two categories involve internal individuals being assigned to positions.

(iv) Creation of position due to incumbent effort at enlargement of own job (1)
(v) Forced to accept a job, the respondent did not like (1)

The table of Figure 7.15 shows the response data collected for types of responses mentioned at least 10 times.

Method of assignment to position	Organisation type according to job design practice					
	Ad hoc		Unit		Corporate	
	JM	JNM	JM	JNM	JM	JNM
1. External recruitment						
(i) through advertisement	2	6	1	2	6	5
(ii) through head-hunting	1	5	-	2	1	1
2. Internal recruitment						
(iii) internal advertisement	1	2	4	4	1	3
(iv) internal invitation	21	29	18	13	39	34
(v) election by peer group	6	3	1	-	6	4
Column totals	31 ↓ 45		24 ↓ 21		53 ↓ 47	
	76		45		100	

Figure 7.15: Responses on the status of appointee, and method of appointment

Global comparisons of the three types of organisations on the internal-external dichotomy of the appointees status reveal no significance. However, a noteworthy point that emerges from this data is the 'election by peer group' method of appointments. Although this particular method does not get much reported in literature it seems to be adopted, for managerial appointments, 9% of the times. The data indicates that this particular method is more often used in ad hoc and corporate types of organisations, where it is 10 times more likely to be adopted than in unit type of organisations.

On the other hand internal advertising as a method of finding suitable candidates to fill a position appears, on the evidence of this data, to be more popular in unit types of organisations. Data collected in these studies indicates that this particular method may even be used in unit type of organisation for filling up to as many as a third of the vacancies that arise.

7.4.1.3. Length of time in current position

The table of Figure 7.16 presents the data for the 231 responses given to items on the length of time the respondents had occupied their current position. Figure 7.17 gives the plots of cumulative percentages for the data of Figure 7.16, in which the jobs modified and jobs not modified data has been combined

Length of time in position occupied	Type of organisation						Row totals
	Ad hoc		Unit		Corporate		
	JM	JNM	JM	JNM	JM	JNM	
Less than 1 year	8	1	13	5	13	-	40
" " 2 years	17	6	6	5	14	3	51
" " 5 years	11	24	5	11	11	18	80
" " 8 years	3	14	-	-	10	7	34
More than 8 years	2	2	-	1	3	18	26
Column totals	41 ↓ 88	47	24 ↓ 46	22	51 ↓ 97	46	231

Figure 7.16: Data on length of time in current position

for the three types of organisation. The contrast of the cumulative curves for the unit and corporate types of organisations, evaluated with the Kolmogorov-Smirnov test, indicates significant differences at the 5% level. This suggests that whereas in the unit type of organisations individuals are less likely to occupy the same position for too long a time, in the corporate type of organisations position occupancy for the population as a whole is likely to be more evenly spread out over the measuring scale used in this study. The performance of the ad hoc type of organisation is such that initially it behaves like the corporate type but soon its performance profile converts to the unit type. In other words, in the ad hoc type of organisation, the position occupancy, as measured here, is neither likely to be too short nor too long, for a large percentage of the population.

Figure 7.18 presents, similar to the foregoing figure, the cumulative graphs for the three types of organisation of length of service but in this figure each organisation type has two graphs: one for data from individuals whose jobs had not been modified and the other from individuals whose jobs had been modified. Analysis by the Kolmogorov-Smirnov test indicate the comparisons significantly differentiate between the two curves. An inference from this would be that modification to jobs are more likely to be introduced earlier on in position occupancy rather than later. And, although this happens irrespective of organisation type, by splitting the data for each type of organisation and plotting two curves (one for jobs modified and one for jobs not modified) the

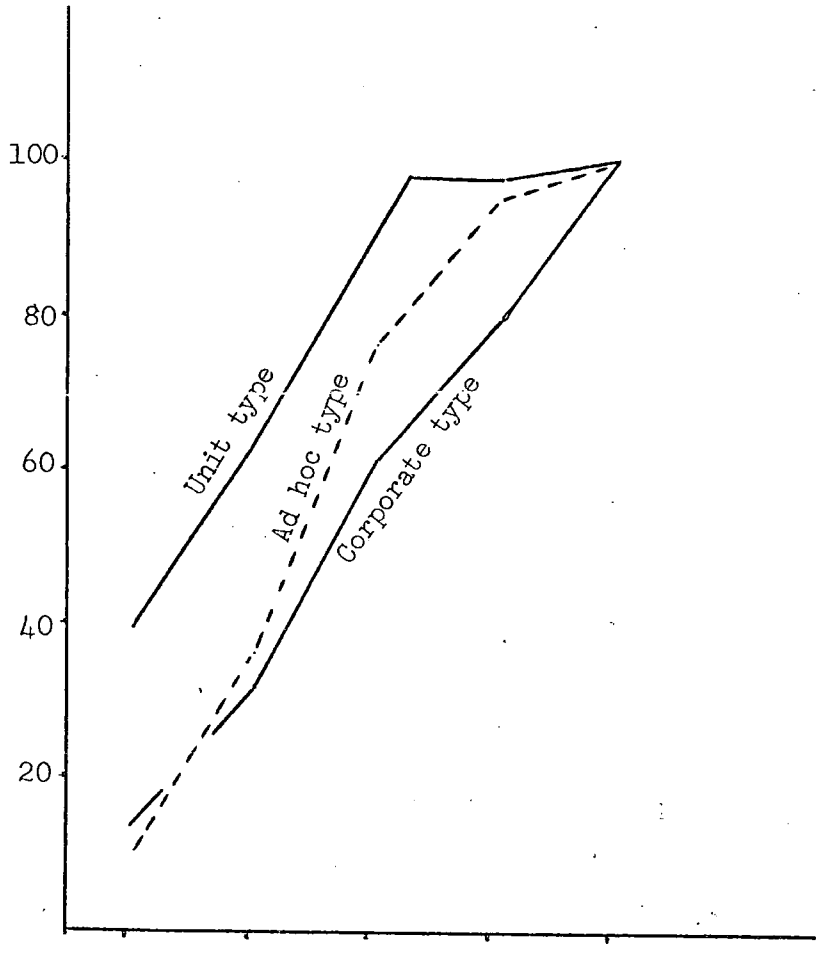


Figure 7.17: A comparison of length of time in current position for the three types of organisation

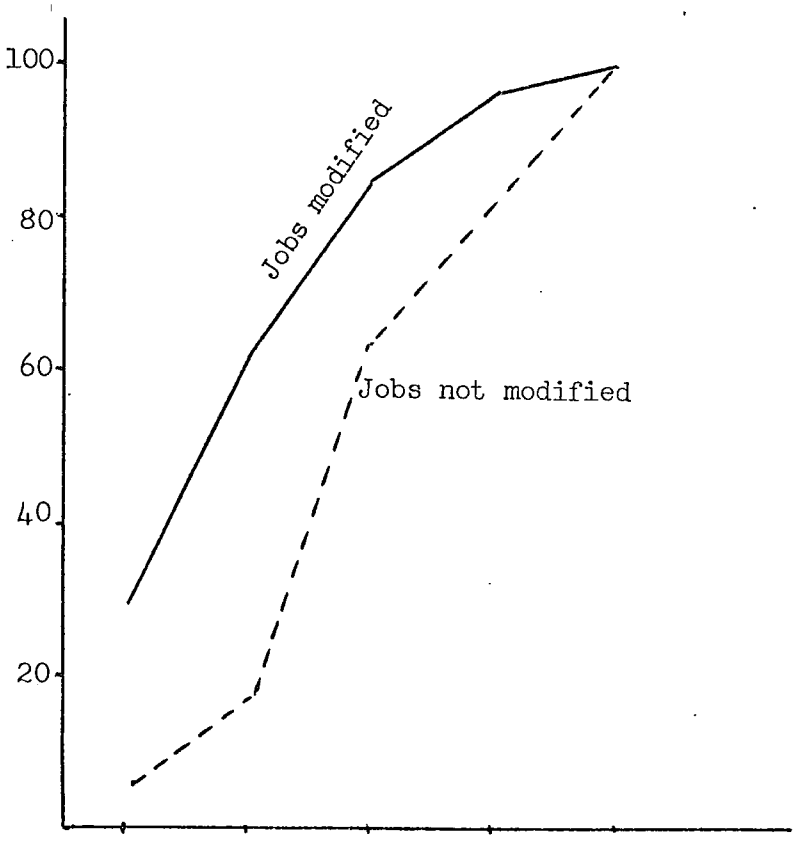


Figure 7.18: A comparison of length of time in current position for incumbents whose jobs had been modified and those whose jobs had not been modified

analyses indicate that within organisation type the above inference still holds.

7.4.1.4. Nature of move to new appointment; promotions and experience

The data collected on the questionnaire item addressed to the nature of move to the new appointment could be classified into two classes; but a fair number of responses could not be so classified. The unclassifiable responses (where numbers within brackets show the frequency of that response) are:

- Restructuring (3); reorganisation (1); consolidation (1);
- Natural career progression (2)
- Returning from overseas (1); transfer (1)
- Job rotation (1)
- Efficiency (1); to improve efficiency of department (1)
- To make use of wide experience (1); to fulfil a specific job function (1)
- To preserve employment in uncertain situation (1)
- A sideways move with the benefit of car/expense account (1); lateral (1)
- To create a vacancy within the corporate managerial structure (1)
- Challenge (1)

Of the total of 184 responses, ten percent fell into the unclassifiable list given above. For the other 165, the two main classes were:

1. Gain experience
2. Promotion

The table of Figure 7.19 presents the data on 'gain experience' class, split by organisation type and whether or not respondents had had their jobs modified. The table of Figure 7.20 presents corresponding data for the 'promotion' class.

Organisation type					
Ad hoc		Unit		Corporate	
JM	JNM	JM	JNM	JM	JNM
10	9	9	2	8	3

Figure 7.19: Responses indicating nature of move to new position to involve considerations of 'experience gain'

Thus, data on 'experience gain' class, overall (disregarding whether or not incumbent jobs had been modified) indicates that in the unit and ad hoc types of organisation assignments to new positions are twice as likely to be for the sake of gain in experience than in the corporate types of organisation. However, this interpretation has to be treated with caution, for the analysis in Section 7.4.1.3 had revealed that position occupancy is shorter in ad hoc and unit types of organisation. It could thus be the case that these earlier results are reflected

Organisation type					
Ad hoc		Unit		Corporate	
JM	JNM	JM	JNM	JM	JNM
20	11	10	14	37	32

Figure 7.20: Responses indicating nature of move to new position to be a 'promotion'

in the data being discussed now. This view is further reinforced by analysis of the data separately for respondents whose jobs had, or had not, been modified. A possible way of analysing this would be to form indices of occurrence-frequency with the sample size in organisation type as a denominator, as shown below.

		Jobs modified	Jobs not modified
Organisation type	Ad hoc (88)	10/88 = 0.11	9/88 = 0.10
	Unit (47)	9/47 = 0.19	2/47 = 0.04
	Corporate (98)	8/98 = 0.17	3/98 = 0.06

The fact that for the ad hoc type of organisation the index remains practically static while for the corporate type of organisation it increases nearly three-fold suggests that the corporate type of organisation may be modifying jobs to facilitate learning/gain-in-experience relatively more than the ad hoc type.

With regard to the 'promotion' class, for which the data is given in Figure 7.20, the analysis of data, through index formation, as discussed above, is given below

		Total sample	Jobs modified	Jobs not modified
Organisation type	Ad hoc	0.35	0.49	0.23
	Unit	0.51	0.40	0.64
	Corporate	0.70	0.71	0.70

The above indices could be intrepreted as suggesting that assignment to a new position through promotion is twice as likely in the corporate types of organisation than in the ad hoc type of organisations (column 1; indices being 0.70 and 0.35, respectively).

Looking at the indices of the decomposed data (jobs modified and jobs not modified) shows that in the corporate type of organisation there is relative stability, i.e. when an appointment involves promotion, whether or not the job will be subsequently modified is not materially affected. On the other hand, data indicates that in the ad hoc and unit types of organisation, whether or not the jobs are modified may be related to whether a promotion was involved in the assignment to position; but the interactions are in opposite directions: whereas in the ad hoc type of organisation the likelihood of job modification is increased (by twice as much) when promotions are involved in initial assignment, the same likelihood is reduced (by half as much) in the unit type of organisation

Learning about, for, upon and on the job

In this section are discussed data from three questionnaire items:

1. Whether the appointments were in pursuance of a career plan
2. Whether the individual had received training prior to appointment
3. The degree of knowledge of job contents at appointment

From the above list, it should be clear that an obvious consideration in some discussions would be whether or not the appointee, at the time of appointment, was internal or external to the organisation. Whenever possible, therefore, attempt will be made to separate the data according to this dichotomy.

7.4.1.5. Career plans

The table of Figure 7.21 presents the responses, on whether or not the appointments were in pursuance of career plans, for both the internal and external appointees.

Response	Status of appointee							
	Internal				External			
	Type of organisation				Type of organisation			
	Ad hoc	Unit	Corpo-rate	Row total	Ad hoc	Unit	Corpo-rate	Row total
No	23	8	20	51	0	2	1	3
Yes	35	28	47	110	15	4	12	31
Don't know	13	4	16	33	1	1	0	2
Column totals	71	40	83	194	16	7	13	36

Figure 7.21: Responses for whether the assignment was in pursuance of career plans

The data could be interpreted to suggest that in the ad hoc, unit and corporate types of organisation, for internal appointees career plans are being pursued 49%, 70% and 57% of times respectively. The corresponding figures for external appointees are 94%, 57% and 92%. The fact that while the unit type of organisation outperforms the ad hoc and corporate types for internal appointees, its performance is much lower for the external appointments could be regarded as suggestive of further research endeavour in this area; especially so since the data on external appointees in this sample is limited.

7.4.1.6. Training for the new job

The table of Figure 7.23 shows the responses on whether or not the new appointees had received training to prepare them to work effectively in their new job.

Response	Status of appointee							
	Internal				External			
	Type of organisation				Type of organisation			
	Ad hoc	Unit	Corporate	Row total	Ad hoc	Unit	Corporate	Row total
No	43	25	42	110	10	4	9	23
Yes	28	13	41	82	6	4	4	14
Column totals	71	38	83	192	16	8	13	37

Figure 7.22: Responses to whether or not the new appointees had received training to prepare them for effective performance in the new job

Given the importance currently being attached to management development (see Easterby-Smith et al (1980)), the above data, where 58% of the respondents received no training, is rather astonishing. It could be the case that the training provided was inappropriate as a preparation for the job or that no facilities were provided. In either case there appears to be a prima facie evidence to suggest further research effort in this area, to answer a whole host of queries that this finding may prompt.

Focussing on the internal appointees only, data suggests that the likelihood of having received training is the highest for corporate type of organisation,

where it is 49%, and lowest for unit type of organisation where it is reduced to 34%. The corresponding figure for the ad hoc type is 39%. Juxtaposed to this, the data on external appointees suggests a reversal of the trend deducible from the internal appointees. The lowest likelihood for external appointees having received training is for the corporate type of organisation, being 31%, and the highest for unit type where the corresponding figure goes up to 50%. The likelihood of having received training, for external appointees in the case of ad hoc type of organisation is 38%.

7.4.1.7. Knowledge of job contents at appointment

The table of Figure 7.23 presents the data on the degree of knowledge of job possessed by the respondents atthe time of their appointment. This table gives the data by organisation type and the numbers in parenthesis are the percentage frequencies, for each type of organisation.

Organisation type	Degree of knowledge of job						Row totals
	Up to 2	at 3	at 4	at 5	at 6	at 7	
Ad hoc	2 (2)	9 (11)	11 (13)	34 (40)	21 (25)	7 (8)	84 (=100%)
Unit	0 (0)	10 (25)	9 (23)	11 (28)	6 (15)	4(10)	40 (=100%)
Corporate	5 (7)	10 (14)	9 (13)	30 (42)	14 (20)	3 (4)	71 (=100%)
Column totals	7	29	29	75	41	14	195

Figure 7.23: Responses to the question on degree of knowledge of job contents possessed by new appointees

Note: Only one respondent, that from the ad hoc type of organisation, had measured the knowledge he possessed at point one on the 7 point scale provided. This case is included in the first column of the table.

The graphs in Figure 7.24 are the plots of the cumulative percentage frequencies for the three types of organisations. In these cumulative profiles the greatest contrast occurs in the graphs representing appointees' degree of knowledge of job for the unit and corporate organisation types. And, the data suggests that proportionately respondents from the corporate type of organisation as compared with those from the unit type would possess a higher degree of knowledge of job at appointment. Furthermore, the corporate type of organisation outperforms even the ad hoc type, although the contrasts here are statistically more significant.

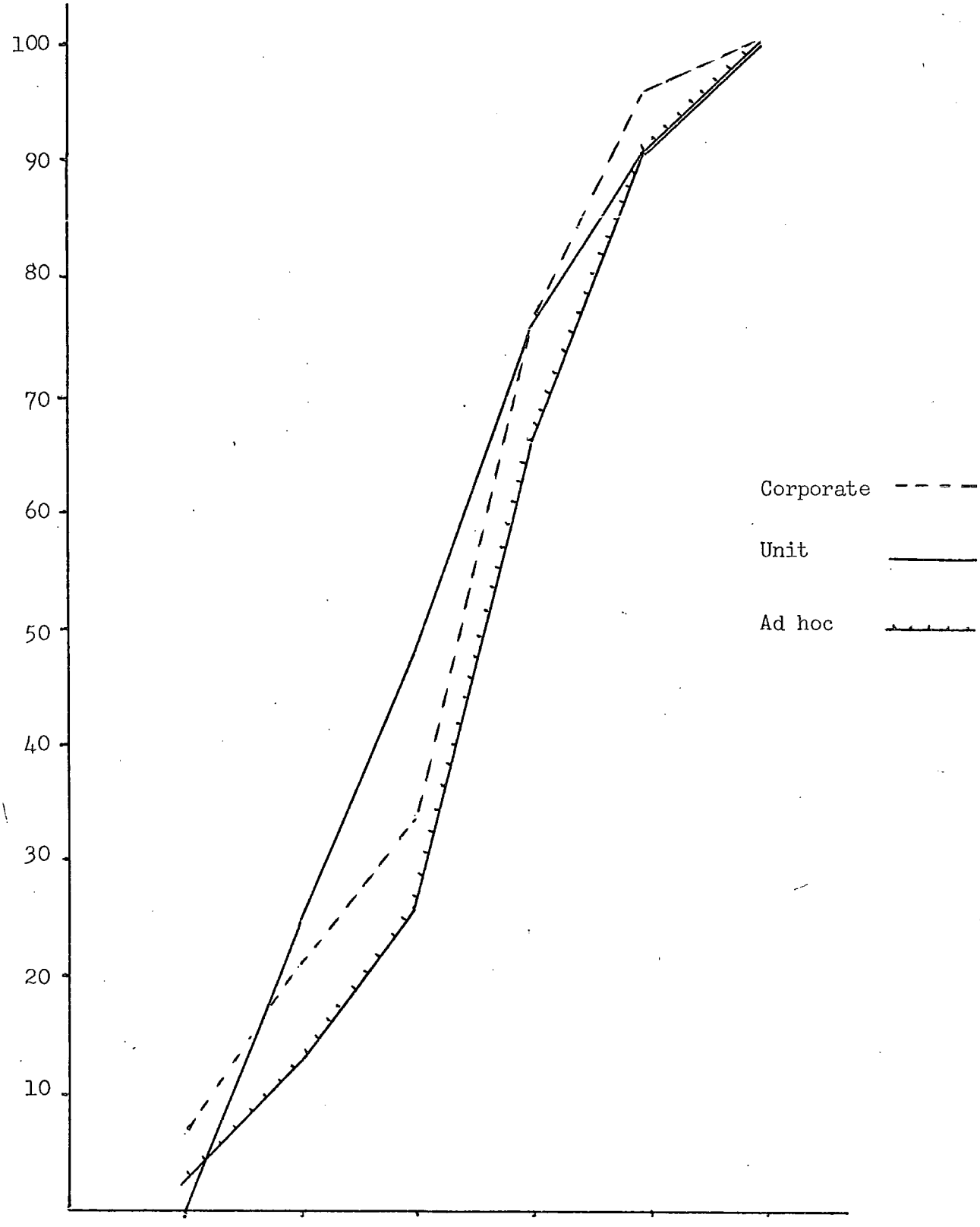


Figure 7.24: Cumulative percentage graphs for the degree of knowledge of job possessed by new appointees

Although for specific cases inferences regarding whether the possession of a high degree of knowledge of job contents, or for that matter a low degree, would be good or bad cannot be made, literature consensus would appear to suggest that a hypothesis could be made that both very high and very low degrees of job knowledge would be dysfunctional. A low degree of job knowledge might lead to ambiguity and a high degree would provide a lack of novel stimulus.

Figure 7.25 is a reorganised presentation of the data of Figure 7.24 where the degree of knowledge of job is consolidated into the classes: low, medium and high.

Type of organisation	Degree of knowledge of job			Row total (basis of percentages)
	Low	Medium	High	
Ad hoc	11 (13%)	45 (54%)	28 (33%)	84 (= 100%)
Unit	10 (25%)	20 (50%)	10 (25%)	40 (= 100%)
Corporate	15 (21%)	39 (55%)	17 (24%)	71 (= 100%)

Figure 7.25: Responses to degree of knowledge of job, consolidated into 3 classes

The data of Figure 7.25 suggests that very low knowledge of job, at appointment time, occurs least frequently in ad hoc type of organisations and most frequently in unit type of organisations. Contrasted with the foregoing, very high degree of knowledge of job occurs most frequently in the ad hoc type of organisations. The contrasts, in the degrees of knowledge of job possessed, are greatest for the class 'low' and least for the class 'medium', being 12% and 5% respectively.

Integration into new position - methods of establishing the specifics of the new job

Under this heading are discussed data from two questionnaire items - one specific and the other more general - which throw light on how appointees within these three types of organisation come to grips with establishing the particulars of their new job. The specific item was addressed at finding out the use of handover periods. The general item was aimed at finding out 'how it actually happened'.

7.4.1.8. The use of handover periods

Handover periods can, of course, be used only when the appointee is taking up a position about to be vacated; handover periods would thus be meaningless

for newly created positions.

From the response data collected, the following items:

- six years as deputy (1);
- previously assistant to outgoing job holder (1); assistant for 12 months (2);
- job taken over a long period (1);
- continuous liaison with predecessor over a period of several years (1).

which could be regarded as handover methods, are not included in the table of Figure 7.26 which presents the data on the use of handover periods and lengths of handover period for the sampled managers.

Type of organisation	No hand-over period	Handover period of length					Row totals excluding "no"
		One day	1 day, up to 1 week	1 week, up to 2 weeks	2 weeks, up to 1 month	1 month	
Ad hoc	23	3	4	12	6	-	25
Unit	11	4	4	3	5	1	17
Corporate	13	1	27	6	4	2	40
Column totals	47	8	35	21	15	3	82

Figure 7.26: Responses to the use of handover periods

The data, on the use of handover periods, thus suggests that while overall there is nearly a 2 to 1 chance that new appointees to positions being vacated would, on arrival at the new job, have some integration facilitative period, within the various types of organisation there appears to be differences over the use of handover periods. These differences can be compared on the ratio-indices:

Ad hoc = 25/48 = 0.52
Unit = 17/28 = 0.61
Corporate = 40/53 = 0.75

These indices show a trend in which the likelihood of a handover period is the least (0.52) for the ad hoc type of organisation, rises a little for the unit type (0.61) and is the highest (0.75) for the corporate type of organisation.

Further analysis of this data, by regarding a handover period of up to one as 'short' and greater than than one week as 'long', reveals that individuals taking over a position to be vacated are likely to receive a longer handover period if they are in an ad hoc type of organisation as compared with those, in

similar circumstances but in corporate type of organisation. These comparisons, based on the indices

Ad hoc - probability of short period = 0.28; of long period = 0.72
Unit - " " " " = 0.47; " " " = 0.53
Corporate - " " " " = 0.70; " " " = 0.30

show that while the likelihood of a handover period is the least in ad hoc types of organisations, if such a period is granted it is more likely to be long. The foregoing contrasts with the practice in the corporate type of organisation where the likelihood of having a handover period is greatest but the length of the period is likely to be short.

7.4.1.9. Ways of learning the job contents found useful by newly appointed managers

The respondents were asked to state the ways they found most useful in learning the actual job contents of their new appointment. A classification of these responses is presented in the table of Figure 7.27, where the figures are separated out for the different types of organisations.

Organisation type	Reading the documented description	Predecessor provides description	New boss describes the job	Role set (excluding boss) describes job	Job determined by own effort	Row totals
Ad hoc	7	25	36	18	69	155
Unit	6	7	27	16	30	86
Corporate	16	29	31	22	65	163
Column totals	29	61	94	56	164	404

Figure 7.27: Classified responses on the ways found most useful in learning the job contents

A finding of this study that could be regarded important is the low helpfulness provided by documented job descriptions to the new appointees, in their effort to learn their new job. Given that the survey reported in Chapter 6, had indicated nearly 80% organisations to be issuing job descriptions, the evidence here, on a facet of their utility, could be regarded as suggestive, firstly, of research towards finding out the reasons for this low utility and thence at efforts for improvements thereof.

Although in all three types of organisation, data suggests learning through performance (trial and error) and self (unilateral?) definition of job to be the most useful means of finding out the contents of the new job, there are some differences between the various types of organisation over the use of this particular way. Figures for comparison derived in the way which has been fully explained in earlier subsections, are:

Ad hoc	0.78
Unit	0.64
Corporate	0.66

The values of the above ratios suggest that while unit and corporate types of organisation are similar with respect to self determination of job, in the ad hoc type of organisation behaviours associated with self-determination would occur more frequently, compared with the aforesaid two.

7.4.1.10. Modifications at job take-over time

Responses elicited to the question concerned with whether or not modifications were made to either the existing job description (for vacated positions) or to the job specifications (for new positions) are presented in the table of Figure 7.28.

Type of organisation	Frequency of response		Row totals
	No	Yes	
Ad hoc	56	30	86
Unit	20	21	41
Corporate	51	30	81
Column totals	127	81	208

Figure 7.28: Responses indicating whether or not the job descriptions or job specifications were modified at the time of new appointment

The data of Figure 7.28 suggests that organisation types ad hoc and corporate behave similarly, and that the probability of modification of the type being discussed are around 0.36 in each of these. On the other hand, for the unit type of organisation the probability of the event under discussion is 0.51.

7.4.2. The process, triggers and rationale of modifications

In this section are presented a unique set of results which helped the autho

to define the characteristics which should be possessed by any managerial job design methodology. The basic data discussed in the subsection here often involved the construction of integrative models which have helped to explicate the various phenomena under study.

7.4.2.1. Antecedents, techniques and outcomes of job modifications

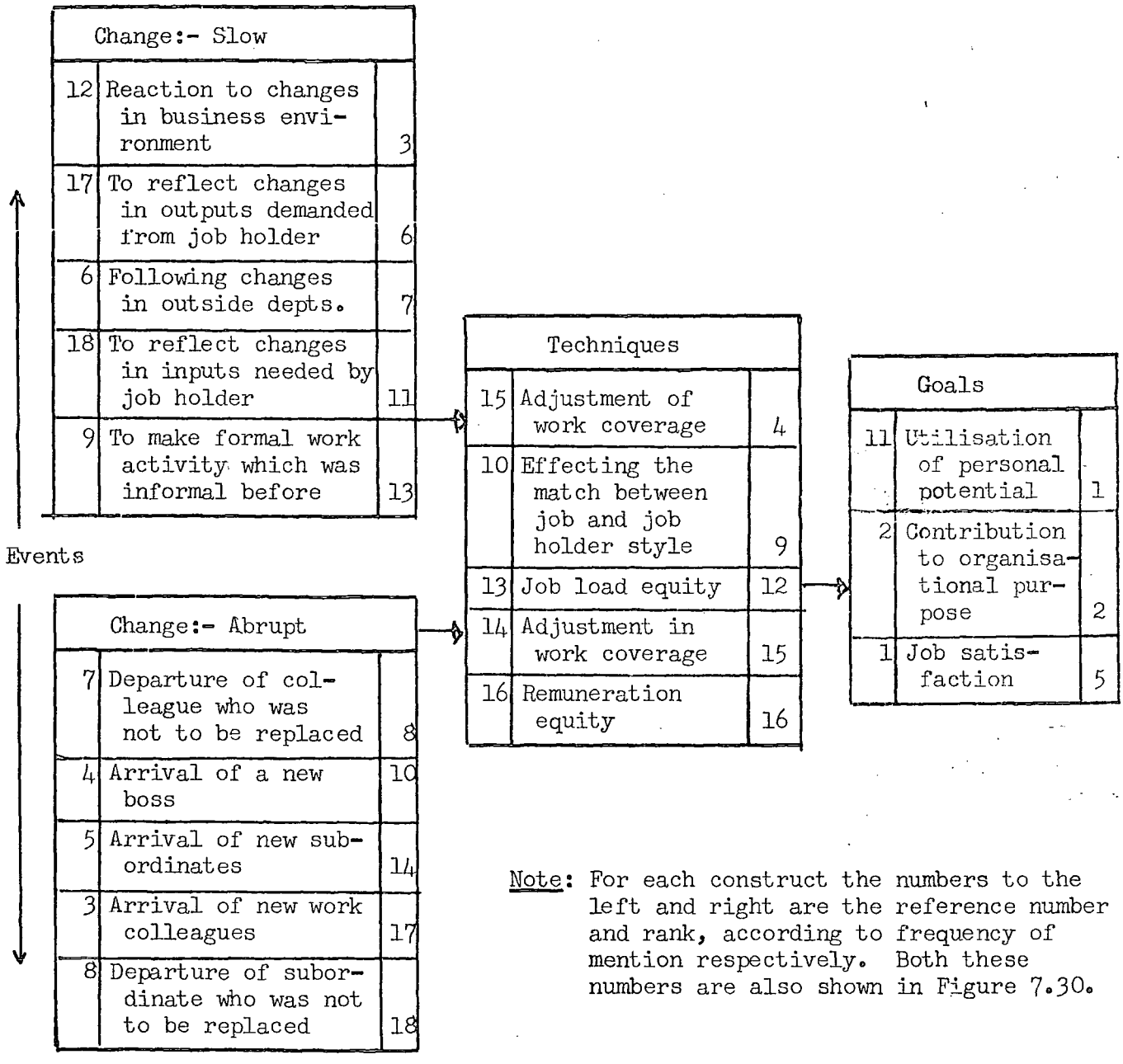
The table of Figure 7.29 presents the classification of the responses (only those which were stated at least four times) given to the request for statements describing the Reasons for job modification. The table is compiled such that the most frequently mentioned construct, ranked first, is given at the top of the table and the least frequently mentioned construct ranked 18th, is at the bottom.

Ref. No.	Construct	Frequency of mention	% frequency (with respect to no. of responses)	Cumulative % frequency	Rank
11	Utilisation of personal potential	60	13%	13%	1
2	Contribution to organisational purpose	57	12%	25%	2
12	Reaction produced by business environment changes	48	10%	35%	3
15	To improve work coverage	38	8%	43%	4
1	To increase job satisfaction	37	8%	51%	5
17	To reflect changes in the output demanded for job holder by others	35	7%	58%	6
6	Following changes in other departments	31	6%	64%	7
7	Following the departure of a colleague who was not to be replaced	24	5%	69%	8
10	To improve the match between job holder managerial style and the job	21	4%	73%	9
4	The arrival of a new boss	21	4%	77%	10
18	To reflect changes in the inputs needed by job holder from others	19	4%	81%	11
13	To produce an equitable job load among staff members	19	4%	85%	12
9	To make formal work activity which was informal before	19	4%	89%	13
5	The arrival of a new subordinate	15	3%	92%	14
14	To reduce overlap in duties	13	3%	95%	15
16	To produce equitable remuneration	11	2%	97%	16
3	The arrival of a new work colleague	6	1%	98%	17
8	Following the departure of a subordinate who was not to be replaced	4	1%	99%	18

Figure 7.29: Responses indicating reasons for job modifications

Altogether 478 responses are included in Table 7.29.

The Figure 7.30 introduces a model derived from the data of Figure 7.29.



Note: For each construct the numbers to the left and right are the reference number and rank, according to frequency of mention respectively. Both these numbers are also shown in Figure 7.30.

Figure 7.30: Job modifications process model, based on Reasons for modifications

Having presented the derived Model of the job modification process, the reasons mentioned by the respondents less than four times and therefore not covered in the table of Figure 7.30 will be presented and attempt made to classify the underlying constructs in accordance with the above model.

- Increased job opportunity - outcomes (leading to the job satisfaction goal
- Reduction in management hierarchy - technique
- Improvement in business communications - technique
- Combining of two (or more) positions - technique
- Bringing together of congruent activities - technique

- Reorganisation/integration/centralisation - technique
- Business growth - event - slow change
- Setting up of new department - event abrupt change

The three statements, written by respondents, vaguely depicting goals, but which the author hesitates to classify are:

- To improve overall efficiency
- To improve awareness of corporate selling
- Development

The discussion of the data denoting Reasons for Job Modification so far has disregarded the fact that the data originates from three distinct types of organisations. Some comparisons between types of organisation for this data will now be presented.

Four between organisation type comparison based on the four components of the model of Figure 7.31 are to be discussed. The method of comparison, in each case, is based on frequency ratios; the method being the same in each case, the derivation for only the first comparison will be fully explained.

Analysis of 'goals' for organisation type

Figure 7.31 presents the data on reasons for job modification for the three constructs comprising the 'goals' component in the job modification process model.

Organisation type	Frequency of construct mention	No. of respondents in type of organisation
Ad hoc	14 + 14 + 18 = 46	41
Unit	9 + 15 + 14 = 38	25
Corporate	14 + 28 + 28 = 70	52
Total	154	118

Figure 7.31: Decomposition of 'goals' responses by organisation type

The comparison ratios for the three types of organisation are:

Ad hoc	46/41	=	1.12
Unit	38/25	=	1.52
Corporate	70/52	=	1.35

These ratios signifying the reason for changes per modified job can be interpreted as signifying the importance placed on the goals for each type of organisation.

It thus is the case that in the unit type of organisation, the likelihood of 'goals' propelled change is the highest; in the corporate type of organisation it is the second highest and least in the ad hoc type of organisation.

Analysis of 'techniques' by organisation type

The comparison ratios for techniques by organisation type, calculated as explained above, are:

Ad hoc	0.85
Unit	1.16
Corporate	0.73

Thus, while the likelihood of 'techniques' propelled modifications to job, as in the foregoing case of 'goals,' is highest for the unit type of organisation, this time the least likelihood is associated with the corporate type; the ad hoc type now falls between the unit and corporate types whereas in the foregoing it was the one to which the least likelihood was attached.

Analysis of 'change - slow' by organisation type

The comparison ratios in this case are:

Ad hoc	1.12
Unit	1.48
Corporate	1.33

Analysis of 'change - events' by organisation type

The comparison ratios now are:

Ad hoc	0.71
Unit	0.33
Corporate	0.46

The above indices thus indicate in the ad hoc type of organisation 'abrupt - event based' changes are more likely than in the other types of organisation; in fact this likelihood is twice that for the same event in the unit type of organisations. The likelihood of the above type of modification to jobs for the corporate type of organisation falls between the extremes set by the ad hoc and corporate types of organisations.

The major conclusion from the data in this subsection is:

1. Given that the three measures on the quality of the design of the job ranked 1, 2 and among the reasons for job modification.

(Note: The reasons ranked 3 and 4 were reaction to changes in the business environment and adjustment of work coverage respectively. These have

been classified as event/cause and technique in that order).

2. Given that, the subject of job design has been defined, in chapters 1 and 5, as that of engineering of the individual/organisation interface, the quality of the design of the job could be regarded as a viable, operational concept for not only the static (at one moment) measurement but also for the measurement of change at the individual/organisation interface.

7.4.2.2. Participants to the process of job modification

The table of Figure 7.32 gives the consolidated data on the responses for individuals taking part in the modification to jobs. The set of individuals taking part in the modification of a job could be categorised as:

- Job holder
- (Job holder) role-set - this category includes boss of job holder, his subordinates, colleagues and others task-related to him
- Job designers - those individuals not task-related to the job holder, e.g. personnel department, consultants, etc.

Job modified through the participation of	Frequency of occurrence
1. Job holder alone	3
2. Role set alone	11
3. Job designers alone	4
4. Job holder + role set	59
5. Job holder + job designers	1
6. Role set + job designers	8
7. Job holder + role set + job designers	31

Figure 7.32: A possible classification of the process of job modifications derived by focussing on participants to the process

For the purpose of analysing the above data by type of organisation, three of the seven above classes having a frequency of less than 5 each and between them having less than 8 cases, only the four classes having 8 or more cases each will be discussed.

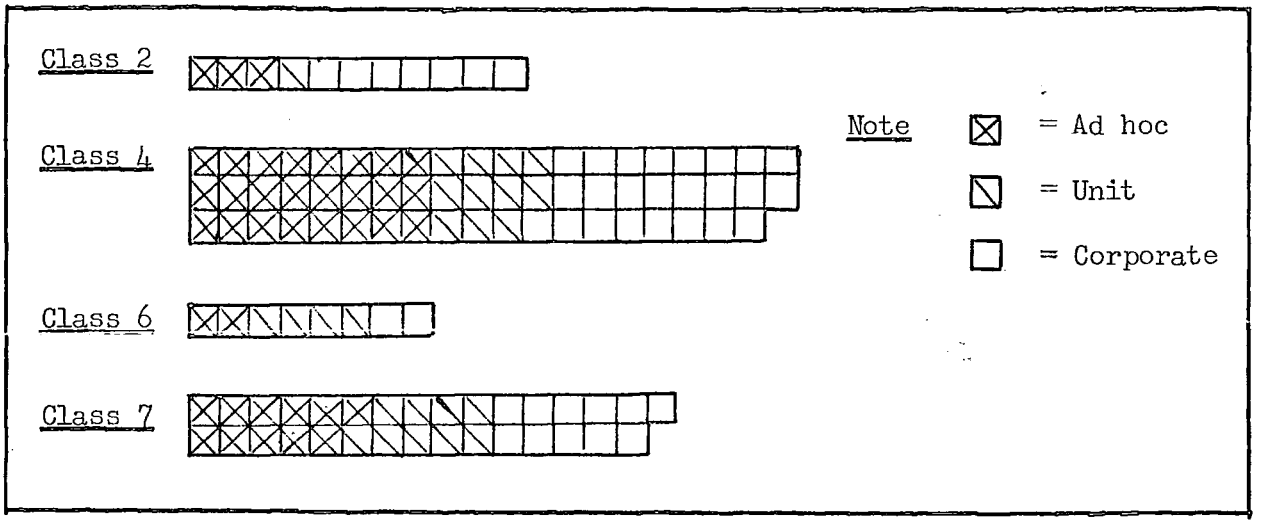


Figure 7.33: Analysis by type of organisation of participant classification

Figure 7.33 is a diagrammatic representation of the participants classification, showing the details of type of organisation contributing to each class. Figure 7.34 shows the computed likelihoods of the various classes of participants introducing modifications to jobs within the three types of organisations. Here the data suggests that none of the following categories: job holder alone; the job designer alone; and job holders and job designers together have any likelihood of modifying jobs in the unit type of organisation. Their combined likelihood is 0.16 in the corporate type of organisation and the likelihood of this happening, in the ad hoc type of organisation, where it is the highest, is 0.23.

Class of participants to the process of job modification	Likelihood of job being modified by the class of participant for each type of organisation		
	Ad hoc	Unit	Corporate
Role-set alone	0.06	0.04	0.13
Role-set + job holder	0.46	0.44	0.46
Role-set + job designers	0.04	0.16	0.04
Role-set + job holders + job designers	0.21	0.36	0.21
Column totals	0.77	1.00	0.84

Figure 7.34: Likelihood of modifications being introduced by various classes of participants

A generalised model of participation to the job modification process

In conclusion, the data on participants to the job modification process suggests that there are three classes of possible participants. The diagram of Figure 7.35 shows the generalised model of job modification process from the participation perspective.

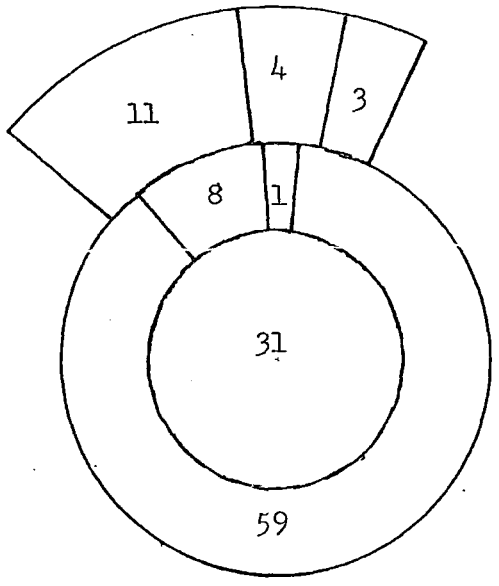


Diagram A: Of the total 117 incidences of job design,
- 18 (11+4+3) undertaken by either job holder or job designer or role-set
- 68 (59+8+1) undertaken through combined action between (job holder + job designer) or (job holder + role-set) or (job designer + role-set)
- 31 undertaken through the participation of all three (i.e. job holder + job designer + role-set)

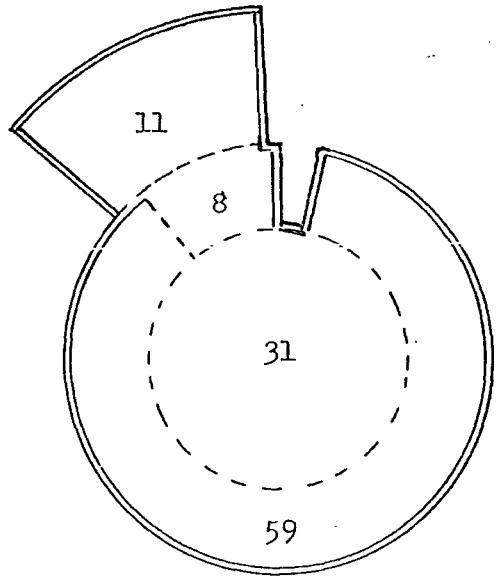


Diagram B: Role-set participation
(Role-set alone 11
Role-set + job designer .. 8
Role-set + job holder 59
Role-set + job holder + job designer .. .. 31)

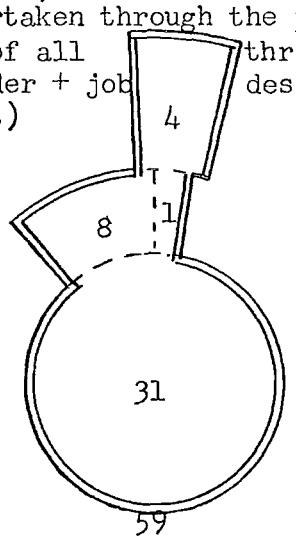


Diagram C: Job designer participation
(Job designer alone 4
Job designer + job holder .. 1
Job designer + role-set .. 8
Job designer + job holder + role-set) .. .. .. 31)

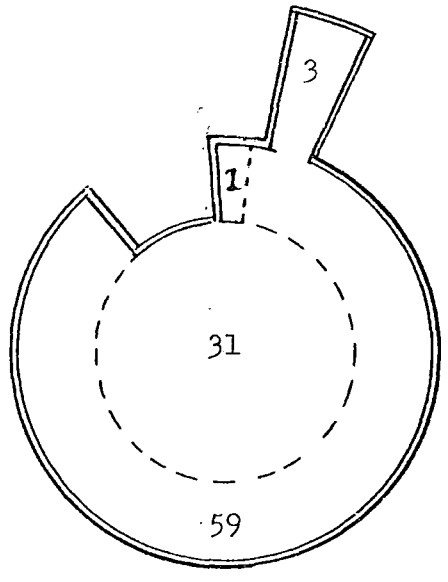


Diagram D: Job holder participation
(Job holder alone 3
Job holder + job designer .. 1
Job holder + role-set 59
Job holder + role-set + job designer .. .. .. 31)

Figure 7.35: Participation to the process of job design, a model for

7.4.2.3. Influence exercised during the job modification process

In the job modification process, as perhaps in other processes, measures based on participation alone may be insufficient: the degree of influence exercised, absolute as well as relative to that exercised by others, rather than the act of participation itself, could be regarded as a stronger measure.

The table in Figure 7.36 presents the data on the degree of influence exercised by various parties to the job modification process.

Type of organisation	Class of individual	Degree of influence (Frequency of mention)				
		Lowest 1	2	3	4	Highest 5
Ad hoc	Job holders	5	3	4	6	13
	Role set	7	18	27	16	21
	Job designers	5	3	4	-	-
Unit	Job holders	1	-	5	4	7
	Role set	5	13	14	15	14
	Job designers	4	6	4	2	2
Corporate	Job holders	6	6	10	10	6
	Role set	10	18	20	14	24
	Job designers	1	0	11	2	3

Figure 7.36: Responses on the degree of influences, consolidated for class of individual

Note that the numbers in the table are frequencies, e.g. along the second row under the column degree of influence to be 4, the number 16 indicates that 16 respondents from the ad hoc type of organisation indicated this degree of influence for the members of the role set.

In order to get a feel for the different degrees of influence exercised by the various classes of individuals as well as to be able to compare this exercise of influence between organisation types a statistic was computed for each class of individual within each organisation type. This computation of the comparison statistic involved the summation of, the products of frequency times the degree of influence for that frequency. To explain this, for the job holders in the ad hoc type of organisation the influence statistic is:

$$(5 \times 1) + (3 \times 2) + (4 \times 3) + (6 \times 4) + (13 \times 5) = 112$$

The corresponding figures within the ad hoc type of organisation for the role set and job designers is 293 and 23. The total of these three numbers is 428. This is the gross group influence as measured on the provided scale.

The division of each of the numbers comprising this total, produces a comparison ratio. The comparison static multiplied by 100, produces the percentage distribution of influence and this is used here as a comparison statistic.

The table of Figure 7.37 presents the influence comparison statistics for the three types of organisation and the three classes of individuals.

Type of organisation	Influence statistic for classes of individuals		
	Job holder	Role-set	Job designers
Ad hoc	26%	68%	5%
Unit	21%	65%	14%
Corporate	29%	57%	14%

Figure 7.37: Comparison of influence exercised by different classes of individuals in the different types of organisation

While the differences obtaining in the distribution of influence, shown in Figure 7.38, are not gross, the tendency indicated by the data shows that whereas in the ad hoc type of organisation the influence split between role-set and job designers is 68 to 5, in the case of corporate type of organisation this split becomes 57 to 14. Similarly, while the influence split between job holders and job designers in the unit type of organisation is 21 to 14 in the corporate type of organisation this split is 29 to 14.

The concept of gross group influence was used while explaining the derivation of the comparison statistic used in the foregoing paragraph. This gross group influence will now be used to compute the index of influence per job for the three types of organisations. The index of influence per job is, simply, computed by dividing the gross group influence by the number of respondents in that group. For the ad hoc type of organisation the index of influence per job would, therefore, be 428/41 = 10.44. For the three types of organisation the index of influence per job is:

Ad hoc = 10.44
Unit = 13.04
Corporate = 7.83

Thus, data indicates that the highest amount of influence per job is exercised in the unit type of organisation and the least in the corporate type. Note that the

data given in the table of Figure 7.38, for the reason of differing amounts of influence per job in the three types of organisations, should be interpreted only specific to organisation type. For example, job designers in both unit and corporate type of organisations exercise 14% influence, but this 14% is of 13.04 and 7.83 in the two cases.

7.4.2.4. Initiation of the job modification process

The table of Figure 7.38 presents the data on class of individual responsible for initiating modifications to jobs. This data thus shows that job designers do not initiate job modifications in ad hoc type of organisation; job designers, on the other hand, do initiate modification to jobs, with about equal likelihood (at 12%) in both the unit and corporate type of organisations.

Class of individual	Ad hoc	Unit	Corporate
Job holder	11	8	8
Role-set aggregate	26	14	34
of (boss's boss	(9)	(4)	(14)
which(boss	(17)	(10)	(19)
(others (subordinates,			
(colleagues, etc.)	(-)	(-)	(1)
Job designers	-	3	6

Figure 7.38: A classification of the initiators of job modification

Job incumbent initiated modifications to jobs are more, and equally so (at around 30%), likely in the ad hoc and unit types of organisation, as compared to corporate type of organisation where the likelihood of this happening is around 17% of all job modifications.

7.4.2.5. Desired degree of influence and its concommitants

From the job holder perspective, as to who actually initiated the modification, who actually participated in the modification process and the degree of influence in fact exercised by the participants may be different from what he considers desirable. The respondents were, therefore, asked whether with respect to these three perspectives of the modifications,

would have preferred the conduct of the process to be any different.

The responses to these queries are presented in the table of Figure 3.39.

The descriptions of how the respondents would have preferred the job modification process to have been conducted, in summary form, are:

1. At boss changeover time, the new boss wishing to introduce modifications should consult the outgoing boss, before actually undertaking modifications

Type of organisation	Initiation			Participation			Relative influence		
	No	Yes	DK	No	Yes	DK	No	Yes	DK
Ad hoc	36	4	1	28	10	3	32	8	12
Unit	21	2	2	14	7	3	13	7	5
Corporate	40	2	10	34	7	11	32	8	12

Figure 7.39: Responses to queries on whether the process of modification should have been differently conducted

2. Before modifications are introduced to jobs, past incumbents of positions being considered for modifications should, whenever possible, be consulted.
3. Even non-job-related peers of the position incumbent whose job is being considered for modifications should be consulted before modifications are introduced.
4. Greater involvement, and influence, for the job related role-set other than boss and boss's boss, i.e. of inputs, providers and takers of outputs.
5. Greater involvement of external task specialists, as opposed to organisational specialists, in determining the type and degree of modification to be introduced.

(Note: Nine of the respondents enumerated 'designated positions', e.g. regional manager, director, marketing director, etc., in which case it was not possible to deduce the relationships of these designated individuals to the incumbent/respondent himself).

7.4.2.6. The effects on surrounding jobs of introducing modifications to a job

The respondents were posited a leading question on whether other jobs were affected as a consequence of the introduction of modifications to their own jobs. If their response to this item was 'yes', i.e. other jobs were affected, they were then asked to describe the class of jobs affected, the number of jobs in each class and, with respect to these latter jobs, whether these changes were given official recognition.

The 'non-Yes' responses are presented in Figure 7.40. From the evidence

Organisation type	Response type		
	No	DK	Not responded
Ad hoc	4	1	-
Unit	5	1	-
Corporate	13	3	2

Figure 7.40: The 'Non-yes' responses to whether other jobs were affected

of this data it could be suggested that when a job is modified the probability that other jobs are affected may be as high as 81%. On the other hand, a definite Yes response was given by only 89 respondents which constitutes 75% of the sample.

For the Yes responses, the diagram of Figure 7.42 presents a data analysis model.

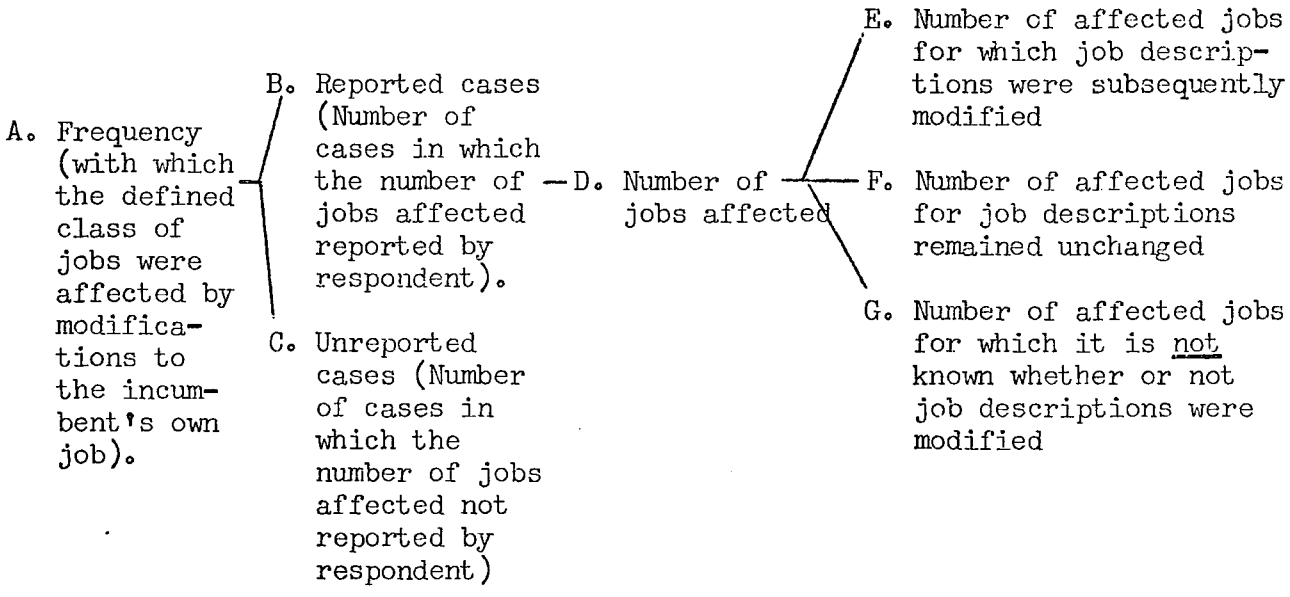
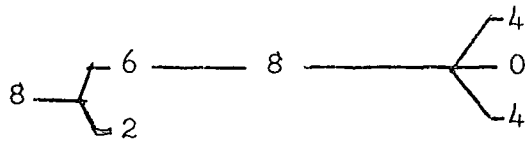


Figure 7.41: A model for analysing data on effect on other jobs of modifying a job

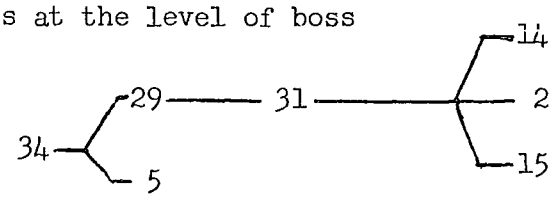
With respect to the model of Figure 7.41, for the number given in position A, the computation of percentage using 89 (the number of cases who reported other jobs to be affected) as the denominator could be regarded as signifying the likelihood of jobs of that class being affected, given that modifications have taken place; similarly a percentage computed using 118 (the total number in the sample) could be regarded as signifying the likelihood of any effect on jobs of that class

(i) Jobs at the level of boss's boss



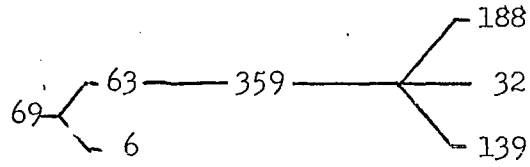
P1 = 9%
P2 = 7%
I = 1.33

(ii) Jobs at the level of boss



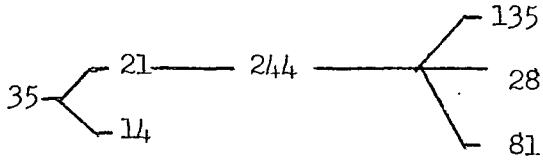
P1 = 38%
P2 = 29%
I = 1.07

(iii) Jobs at the level of subordinates



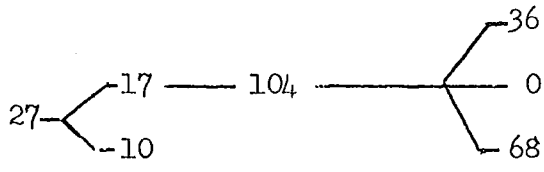
P1 = 78%
P2 = 58%
I = 5.7

(iv) The jobs held by colleagues (supplying inputs)



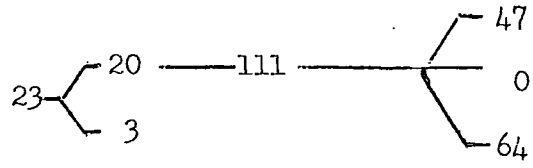
P1 = 39%
P2 = 30%
I = 11.62

(v) The job held by colleague (receiving outputs)



P1 = 30%
P2 = 23%
I = 6.12

(vi) The jobs in relationships other than the above



P1 = 26%
P2 = 19%
I = 5.55

Figure 7.42: Analysis of data on the effects on other jobs of modifications to a given job

Again with respect to the model of Figure 7.41, the number given in position D divided by the number in position B, could be regarded as an index, which correlates with and therefore is a surrogate of the number of jobs, of the focal class, which, on an average, might be expected to be affected.

The Figure 7.42 presents the analysis of data according to the model discussed above for six classes of jobs reported as being affected by modifications to the respondent's own jobs. In this figure the percentages computed with 89 and 118 as the denominator are labelled P1 and P2 respectively. The index, discussed above, is labelled I.

From this analysis of the data, a surprising result to emerge is that inputs supplying jobs are twice as likely to be affected as the output receiving jobs. And this evidence should be judged in the light of evidence from the survey, reported in Chapter 6, which suggested a disproportionate concern for outputs compared to inputs in written job descriptions. The other unexpected indication from the current data is that more jobs at the level of boss's boss are likely to be affected than jobs at the level of the boss.

From the evidence in this data, it could also be said if a managerial job is modified, there is nearly 80% likelihood that the subordinate's job will get modified; but if a managerial job is being considered for modification then the likelihood is around 60%.

7.4.2.7. Appraisal of various aspects of goals and resource availability during the modification process

The data on 'non-yes' responses to the query concerned with whether or not, during the job modification process, aspects of goals were reappraised, is given in Figure 7.43.

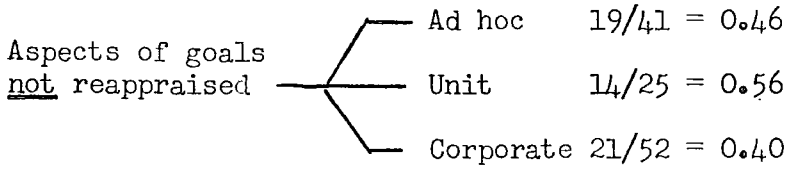


Figure 7.43: 'Non yes' responses, on whether aspects of goals were reappraised

The likelihood of non-appraisal, suggested by data, is then the highest for the unit type of organisation and the least for the corporate type, the ad hoc

type of organisation falls between the extreme set by the unit and corporate types.

For those with a Yes response, the table in Figure 7.44 gives the frequency with which members of each organisation type indicated, the various perspectives on goals were subjected to reappraisal as part of the job modification process. Overall, from this data, the computation of Bayesian type of probabilities indicates no divergence in the performance of the three types of organisation. However, computation of probabilities based on original sample size would indicate differences in performance by organisation type.

Aspect of goal	Frequency of reappraisal by organisation type		
	Ad hoc	Unit	Corporate
1. Relevance of goals to job holder	17	6	22
2. Relevance of goals to the dept. of job holder	19	7	18
3. Relevance of goals to organisation	20	9	20
4. The clarity of goals	10	6	16
5. Relative importance of goals	13	7	16
6. Degree of achievability of goals	10	8	21
7. The training necessary in order for the job holder to achieve the goals	8	8	21

Figure 7.44: Data on aspects of goals subjected to reappraisal during job modifications

7.4.3. The primitives of job modification

In this section are presented the data and report made on results from the descriptions of effected modifications to respondent jobs. Thus, while in Section 7.4.2, focus was on the process of change, in this section the substantive element of change is being concentrated upon.

The changes introduced by modification may be viewed as:

1. Intended or desired
2. Concommitant, or side effects of change

The above used label 'concommitant' by no means implies that these will always be unfavourable or unpleasant; some in fact may even be more beneficial to those affected by them. Either type of change, for the purpose at hand, will be treated similarly.

To describe the substantive changes in their jobs the respondents were provided with a list of 54 primitives with a seven point scale attached to each. The mid-point of these scales was marked and the extremities marked with +3 and -3 respectively. These scales, for measuring and describing changes along primitives will henceforth be referred to as the 'primitive scales'. Alongside each primitive scale were three other scales each marked with the title of one of the measures of the quality of the design of the job. Henceforth, the term measures will be used in references to these measures of the quality of the design of the job. In the like fashion, when reference to a particular measure (of the three) is necessary, this will be done by using the referencing system as follows:

Measure 1: Contribution to organisation purpose
Measure 2: Utilisation of personal potential
Measure 3: Job satisfaction

For each primitive in turn the respondents were asked, as a first step, to decide whether or not they would choose to describe the modifications that their job had undergone in terms of that primitive. The basis of choice was the implication of changes in the job along the primitive producing changes along any of the measures. The respondents thus described along the primitives only the effected changes; the descriptions along the measures were the perceived effects of the effected changes.

Data analysis model

For each primitive the data, as explained in the foregoing, was in three parts: modifications along the primitive depicting changes on each of the three measures. For each of these three parts, the data analysis framework constituted a 7 x 7 matrix as shown in the diagram of Figure 7.45.

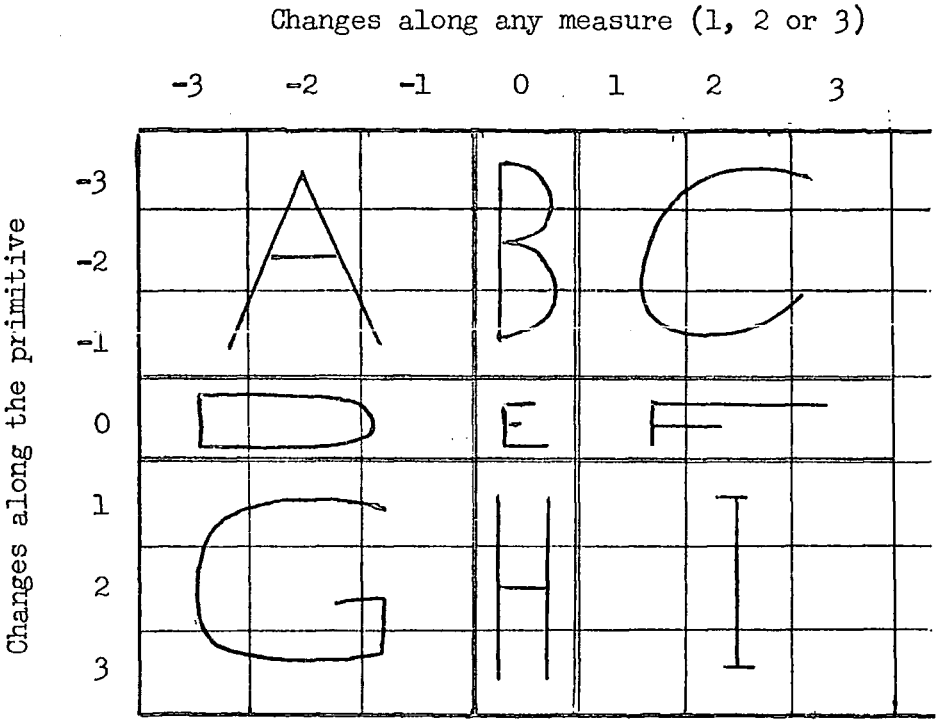


Figure 7.45: Model for analysing the data on substantive changes

The vertical axis in the model of Figure 7.45 denotes changes in the primitive and along the horizontal axis would be represented the changes induced in measure of job being considered, i.e. measure 1, 2 or 3.

In the discussion to follow, reference to elements of the model will be in two ways:

1. To any one of the 49 cells. This will be done by making reference to the scale points. For example the cell in the second row and in the third position will be referred to as the (-2, -1) cell.
2. The areas shown by the grid superimposed on the matrix, comprising of contiguous cells in different locations of the matrix. These will be referenced by the letters drawn within these areas.

An example may help explain the notation. Suppose the primitive under discussion were stress. Three matrices of the type shown in Figure 7.45 would be needed for the type of analysis envisaged: the three would be used to analyse the effects of change in stress (increased, decreased, or not affected during job modification) on the three measures. Focusing on one of these three, suppose the cell (-2, 1) contained the number P. The number P would indicate that P respondents described the modifications to their jobs to have introduced a

reduction in stress of 2 units which in turn produced one unit of change along the particular measure being considered.

Respondents' use of provided scales

While change measurable on the primitive producing no effect on the measures may be more readily understandable, the matter put the other way round, i.e. no change along the primitive producing an effect may require explaining.

At the very basic level the study reported here is concerned with descriptions of the translation (moving) of a job from one state to another. Conceptually, both the states could be described in terms of configuration characteristics. Given this conceptualisation it follows that the changes must have been affected by one, or more, of the following methods:

1. Reinforcement on some (or all) characteristics.
2. Reduction in the loading on some (or all) characteristics.
3. The addition of some new characteristics.
4. The elimination of some previously included characteristics.

The diagram of Figure 7.46 depicts the outcomes of translation. In this diagram are shown two states which the job, in the dynamics of change in the organisational context, could potentially have acquired. Also shown is the original (before modification) configuration and the new, post-modification, configuration. The configurations associated with the two potential states could be viewed as representing the outcomes desired, one by the job holder and the other by the organisation.

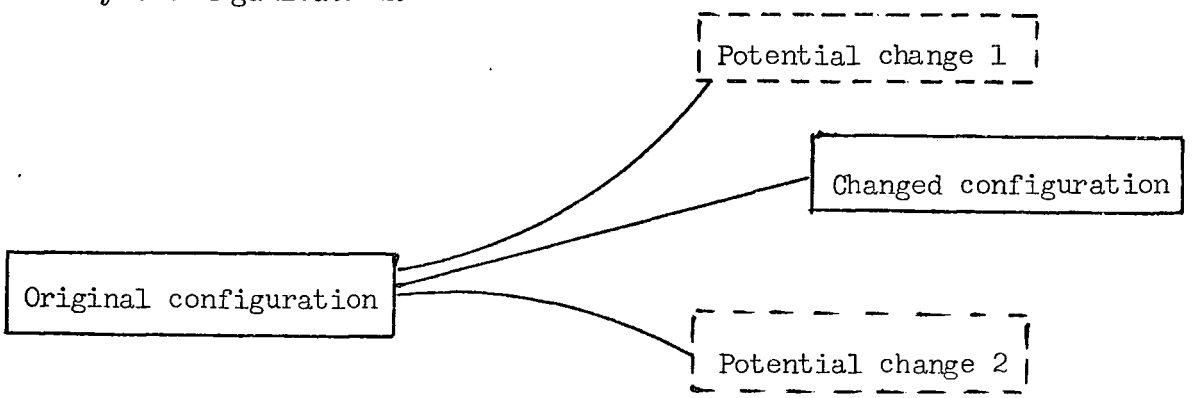


Figure 7.46:

Going back to the model presented in Figure 7.46, the row containing the cells (0, -3), (0, -2) .... (0, 3), following the discussion in the foregoing paragraph, could be interpreted as depicting either some desired state which the job holder was not able to contrive or some state which the job holder was able successfully to avoid. An example, by way of explanation, might help in clarification.

In terms of the earlier discussed primitive - stress - the interpretation of a response of (0, 2) would be that had stress been reduced there might have been a reduction on whichever measure were under discussion. Similarly a response of (0, -2) would suggest that the respondent had desired a reduction in stress but his desire had not been fulfilled.

The above discussion follows from interviews with several respondents. And although the examples have been made with reference to one primitive - stress - the explanation is applicable to all the primitives used in the study.

Interpretations from the analysis model

With reference to Figure 7.45, an interpretative framework for areas D and F has been provided under the preceding heading; responses in these areas indicate either desired but not achieved states (area D), or a successful holding-off operation (area F). The area marked E containing only the (0, 0) cell indicating no change on the primitive producing no change on the measures require no interpretation.

Areas B and H represent various degrees of increases and decreases along the primitives but without these primary changes in any way eliciting change in the measures. These areas are critical, for were a large number of responses to fall in these areas, especially where respondents indicate relatively large changes along the primitive, a direct implication would be that the chosen measures are unrelated to the primitive for which measurement is being attempted.

Areas A and I are similar to each other. These areas either show increases along the primitive resulting in raises on the measures (area I), or the converse i.e. decreases along the primitive resulting in decreases on the measures (area A). In other words, for both these areas data would indicate a positive

correlation between the primitive and the measure.

Areas C and G are bound in a relationship similar, but "mirror image", to the one binding A and I. The mirror image, in this instance, covers and indicates a negative correlation between the primitive and the measure: a rise on the primitive produces a lowering on the measure (in area G) and vice versa (in area C).

Conceptual framework for comparisons between primitives

Here are introduced five concepts developed to facilitate comparisons between primitives. The linkage between the concepts is as shown in the diagram of Figure 7.47. This diagram shows that the calculation of importance, unreciprocation and form are derived directly from the data. Although the values for reciprocation were derived from the values of unreciporcation, this derivation

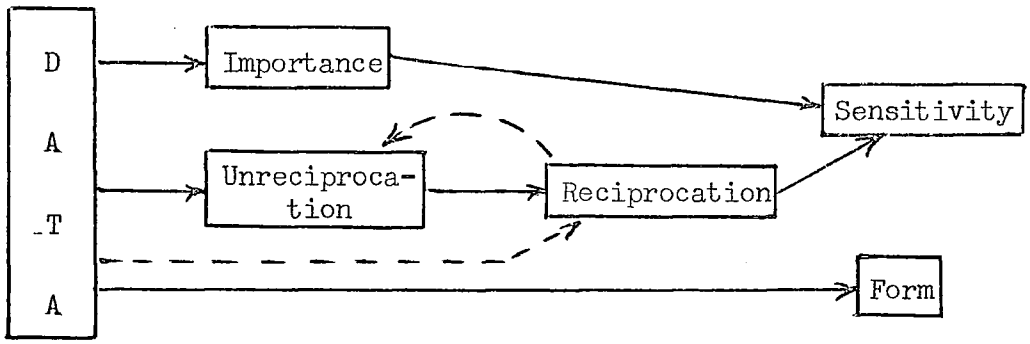


Figure 7.47: Concepts for comparisons between primitives

could have been undertaken directly from data. Sensitivity is derived from the computed values of importance and reciprocation. Before explaining the concepts an important note would be in order. The association of these concepts to the data is to be interpreted in the following way:

The importance of the primitive to the measures, (i.e. each of the three in turn)

The unreciprocity of the primitive to the measures (i.e. each of the three in turn) etc.

In the discussion to follow it will be assumed that for each primitive data has been laid in the form of matrices of the type shown in Figure 7.46. The fact that 118 respondents took part in the study will be used, wherever necessary.

Importance of a primitive to a measure is computed, simply, by dividing the sum of all the frequencies, except that in area E (or the (0, 0) cell), by the total number in the sample (118 in this instance). The figure thus computed reflects the importance gained by the primitive, in the course of modifications to jobs, in precipitating changes on the particular measure under consideration. Thus computed, importance is an index.

Unreciprocation of a primitive to a measure is computed by dividing the sum of frequencies in areas B and H, by the number of respondents in the total study (118 in this case). The figure thus computed reflects the degree by which changes measurable on the primitive elicit no response on the particular measure under consideration. Computation along the suggested lines makes unreciprocation an index.

Reciprocation is the complement of unreciprocation as defined above. Reciprocation of a primitive with respect to a particular measure of job indicates the degree to which the changes in the primitive have the power to influence changes on the particular measure being considered. Thus, reciprocation is also an index.

Sensitivity is defined as a product of the importance and reciprocation indices. Conceptually, a primitive may get low importance during modification but changes along this primitive may evoke a great deal of change on the measures of job. The converse situation, primitives receiving high importance but in fact evoking little, or no, change on the measures of job, is equally plausible. The sensitivity concept, therefore, denotes the reality of the relationship of effect between the primitive and the measure more concretely than either the importance or the reciprocation concepts each on their own.

Form is another index but which consists of a doublet, i.e. two numbers which complement each other and together constitute a whole. To compute the form statistic (for a primitive on a measure), on one side are summed the frequencies in Area A and area I; on the other side are summed the frequencies in areas C and G. The underlying frequencies being summed are, on the one side, those denoting a positive correlation, between the primitive and the measure, and on the other side those suggesting the relationship to be a negative correlation.

The dublet denoting the indices of form is then derived by, similarly, computing the percentage likelihoods of each event (i.e. positive and negative correlation) arising.

Example computation of the comparison statistics

Here will be presented actual examples of how the indices described are computed.

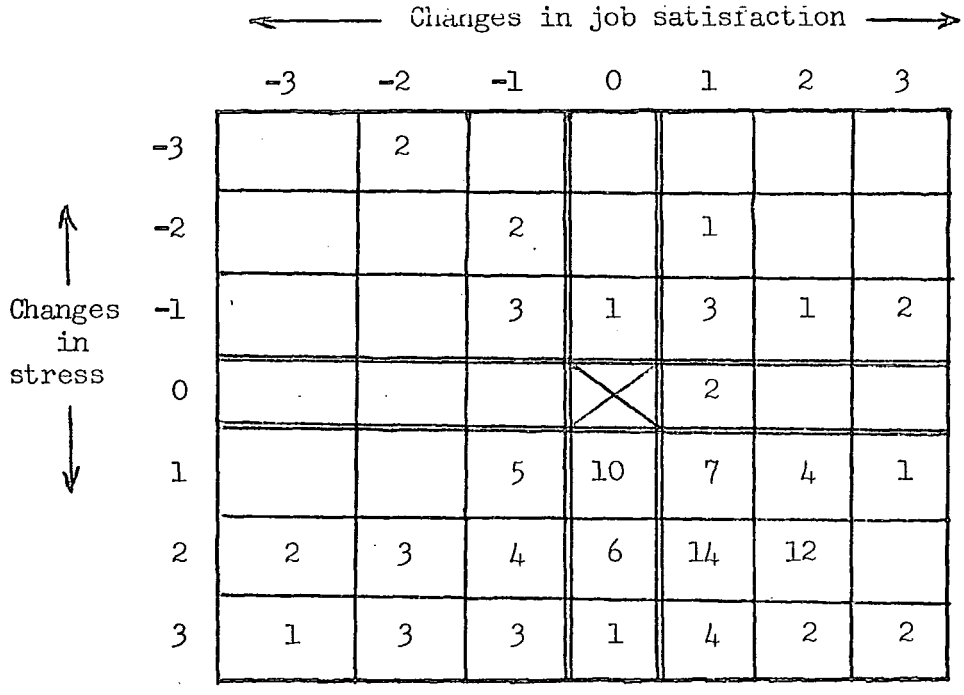


Figure 7.48: Grid presentation of data

Note: Primitive = stress; Measure = job satisfaction.

Figure 7.48 presents data, on the relationship between stress and job satisfaction, obtained in the study being reported. Total number of respondents for the study = 118. The intermediate calculation, based on frequencies within areas, are:

Area	Frequency
A	7
B	1
C	7
D	0
E	-
F	2
G	21
H	17
I	46

The computation of the comparison statistics is as follows.

Importance = Sum of frequencies [in Areas (A to D) and (F to I)]/118

= [(7 + 1 + 7 + 0) + (2 + 21 + 17 + 46)]/118

= 101/118

= 0.86

Unreciprocity = Sum of frequencies in Areas B and H /118

= (1 + 17)/118

= 0.15

Reciprocity = 1 - Unreciprocity = 0.85

Sensitivity = Importance x Reciprocity

= 0.86 x 0.85

= 0.73

Form, based on i. Positive Correlation

Sum of frequencies [in Areas A + I] = 7 + 46 = 53

ii. Negative correlation

Sum of frequencies [in Areas C + G] = 7 + 21 = 28

iii. Total of the above two sums = 81.

$= (\frac{28}{81}, \frac{53}{81})$

=(35; 65).

The Results

For presenting the results a method of referencing the primitives is required. In Figure 7.49 (on two pages) are given the primitives together with reference numbers to be used for referencing.

The table of Figure 7.50 presents the consolidated results for the importance statistic. The table shows that the primitives with reference numbers 29 and 30 received, in this study of 118 jobs, the least importance, as indicated by their importance indices of less then 0.50.

The table of Figure 7.51 presents the consolidated results for the reciprocity statistic. Note that primitives with reference numbers 16 and 27 have consistently low effect in Measures 1 and 2 but affect the job satisfaction measure to a considerably higher degree.

Ref. No.	Questionnaire item No.	Primitive
1	26(i)	Quality and depth of interpersonal relationships
2	25(ix)	(Job holder) interest in parts of his job
3	25(viii)	Fairness in the demands made (on job holder)
4	25(iii)	Stress experienced (by job holder) in doing his job
5	25(ii)	(Job holder's) sense of job ownership
6	25(i)	The level of confidence (the job holder) brings to bear on his job
7	23(xv)	Conflict experienced
8	23(vi)	The pressure to meet deadlines
9	25(v)	Opportunities for future promotion
10	25(vi)	Opportunities for learning and development
11	23(iv)	Skills required to do the job
12	22(vi)	Resources available
13	22(v)	Number of subordinates
14	24(v)	Responsibility
15	24(iv)	Authority
16	24(i)	Financial rewards
17	23(x)	Help from colleagues
18	22(x)	Confidential elements of job
19	22(i)	Outputs: demand on quality
20	22(iii)	Output: demand on quantity
21	22(iii)	Inputs available: quality
22	22(iv)	Inputs available: quantity
23	26(iii)	Agreement with those due to supply inputs of exactly what they will supply
24	26(ii)	Agreement with those due to receive outputs of exactly what is required
25	25(vii)	Opportunity to help others
26	25(iv)	Opportunity for others to examine your work
27	24(xiv)	Amount of uncertainty in job

Figure 7.49: Table of reference numbers for primitives

(continued on next page)

Ref. No.	Questionnaire item No.	Primitive
28	24(xiii)	Amount of travelling required
29	24(xii)	Degree of influence in the appointment of colleagues
30	24(xi)	Choice in working colleagues
31	24(x)	Degree of influence in the work of colleagues
32	24(ix)	Degree of influence in the work of subordinates
33	24(viii)	Influence exercised in the work of the boss
34	24(vii)	Necessary interaction with output role-set
35	24(vi)	Necessary interaction with input role-set
36	24(iii)	Technical knowledge required to do the job
37	24(ii)	Status of job
38	23(xiii)	Activities involved in motivation of others
39	23(xii)	Activities involved in supervising the work of others
40	23(xi)	Activities involved in co-ordinating own activities with those of others
41	23(ix)	Help received from colleagues
42	23(viii)	Help received from subordinates
43	23(vii)	Help received from boss
44	23(v)	Feedback on performance
45	23(iv)	Skills required to do the job
46	23(iii)	Choice in the order of activities undertaken
47	23(ii)	Choice in the methods of doing work
48	23(i)	Choice in what work to undertake
49	22(xiii)	Amount of non-routine work in job
50	22(xii)	Interactions with individuals/groups outside organisation
51	22(xi)	Interactions with other departments within own organisation
52	22(ix)	Opportunity to use judgement
53	22(viii)	Generation and development of new ways of doing things
54	22(vii)	Representing the views of others

Figure 7.49: Table of reference numbers for primitives (Contd.)

Imp.	Measure 1				Measure 2				Measure 3			
$\leq$ 50				29,30				29,30				29,30
50-59	3,7		17	18,23,27,41,43	3,7	13	16,17	18,27,41,43	3,7		17	18,27,41,43
60-69	5,6	9,12,13	15,16	21,24,28,31,33,36,37,42,44,46,50,54	1,5,6	9,12	15	21,23,24,28,31,33,36,37,42,44,50,54	5	9,12,13	15,16	21,23,31,33,36,42,44,50,54
70-79	1,8	10	14	22,26,32,34,35,39,40,45,48,51	8	10	14	22,25,26,32,34 35,39,40,46,51	1,6,8	10		22,24,28,34,35,37,40,46,51
$\geq$ 0-80	2,4	11	-	19,20,25,38,47,49,52,53	2,4	11		19,20,38,45,47,48,49,52,53	2,4	11	14	19,20,25,26,38,39,45,47,48,49,52,53

Figure 7.50: Consolidated results from the Importance statistic

Reci-proca-tion	Measure 1				Measure 2				Measure 3			
≤ 70	4		16	27,51			16	27			17	
71-75	3			26,37	3			28,34	8	11		28
76-80	5,7	11,13	17	28,29,35,36, 43,50	4		17	18,23,30,39,50	3,7			27,35
81-85	2,6, 8	9	15	25,30,33,39, 42,45,46,48, 49	2,5, 7,8	9,11		22,24,25,26,29, 32,35,36,37,38, 40,44	4			22,25,26,34,38
86-90	-	10,12	14	18,20,22,23,24, 31,32,34,38,40, 41,44,47,54	1	13		20,21,31,33,43, 46,49,51,54	1	12	16	18,20,23,24,29, 30,36,37,39,40, 42,43,44,46,47, 49,50
91-95	1	-	-	21,52,53		10,12	14,15	19,41,42,47,48,52	2,5	10,13	14,15	19,21,31,32,41, 51,52,53,54
≥ 96				19	6			44,53	6	9		33,45,48

Figure 7.51: Consolidated results from the Reciprocation statistic

Sensi-tivity	Measure 1				Measure 2				Measure 3			
≤40	3,			27,29,30	3		16	27,29,30			17	29,30
41-45	5,7	13	16,17	43			17	18	3,7			27
46-50		9		18,33,36,37,41,51	7			23,28,43,49				18,41,43
51-55	4,6			23,28,31,42,50,54	5	9,13		21,24,34,36,37,41,44,54				28,50
56-60	1,2,8	12	15	21,24,26,35,44,46		12		31,33,39,42	5,8	11,13	16	23,31,35,36,42,54
61-65		10,11		22,32,45,48	1,8		15	22,25,26,32,35,40,46		9,12		21,22,24,33,34,44
66-70			14	25,34,39,40,49	2,4,6	10,11		51	1,6	10	15	25,26,32,37,38,39,40,46
71-75				38,47			14	38,49	4		14	20,51
76-80				20,52				19,45,47,48	2			45,47,48,49,52
≥81				19,53				20,52,83				19,53

Figure 7.52: Consolidated results from the Sensitivity statistic

Form	Measure 1				Measure 2				Measure 3			
0		9,10	14	18,25,29,31,33, 37,38,45	2,6	9,10		18,25,29,30,31, 32,33,39,40,44, 50	2,6	10		31,44
1-5	1,2, 5,6	11,12	15	19,21,22,23,24, 26,31,32,36,40, 41,42,44,46,48, 49,50,51,52,53, 54	1,3, 5,8	11	14,15	19,21,24,26,36, 37,38,41,42,45, 46,48,51,52,53	1,5	9,11	14,15, 16	18,19,21,23,24, 25,26,29,32,33, 36,37,38,40,45, 48,50,52,53,54
6-10	3,8		16	20,43,47		12		22,23,47	3	12		30,41,42,46,47, 51
11-15		13		39		13	16	20,28,49				22,49
16-20	4		17	28				34, 43		13		20,28,39,43
21-25	7			27,35					8			
≥ 26				34	4,7		17	27,35	4,7		17	27,34,35

Figure 7.53: Consolidated results from the Form statistic

Note: For this table percentages have been computed for both the likelihoods - that of positive correlation and that of negative correlation. Since these events are considered complementary the classification is with respect to negative correlation only. For example, in the results reported for Measure 1, primitive with reference number 1 is shown to have a negative correlation of 1-5%. This means that the positive correlation, for this primitive-measure combination would be 25-99%, or in the notation earlier used the form would be written as (1-5 : 95-99).

The table of Figure 7.52 presents the consolidated results for the sensitivity statistic. The results of this statistic as presented in Figure 7.52 are in ten class. If these results are split on a high, medium and low scale where the first three classes shown were collapsed into the new class 'low' and the last three comprised the class 'high', then yet another form of comparison becomes possible. This new comparison is based on finding the primitives which are consistently low in their sensitivity across all three measures. Results of Figure 7.53 show the primitives:

1. Ref.No.3: Fairness in the demands made on the job holder
2. Ref.No.7: Conflict experienced at work by job holder
3. Ref.No.17: Rules and regulations governing conditions
4. Ref.No.18: Elements of the job confidential to job holder
5. Ref.No.27: Amount of uncertainty in job
6. Ref.No.29: Influence exercised by job holder in the appointments of his colleagues
7. Ref.No.30: Choice offered by the job for the job holder to pick his work colleagues
8. Ref.No.43: Help received by job holder from his boss

to be consistently in the 'low' class on all the three measures. In a short while the case of these 'low' sensitivity primitives will be taken up again.

The Figure 7.53 presents the consolidated results of the form statistics. From the first row of this table, only 2 primitives are such as not to have any negative correlation with respect to all the three measures. Primitives with no negative correlation are:

1. Ref.No.10: Opportunity for learning and development
2. Ref.No.31: Influence exercised by the job holder on the work of his colleagues

The primitives for which the negative correlations are zero, on at least two measures, are eight as given below:

1. Ref.No.2: Job holder interest in part of his job
2. Ref.No.6: The level of confidence the job holder brings to his job
3. Ref.No.9: Opportunity for future promotions for the job holder
4. Ref.No.18: Elements of the job confidential to job holder
5. Ref.No.25: Opportunity offered by the job, for the job holders to help others
6. Ref.No.29: Influence exercised by job holder in the appointment of his colleagues
7. Ref.No.33: Influence exercised by job holder on the work of his boss
8. Ref.No.44: Feedback on performance received by job holder

The primitives for which there was zero likelihood of negative correlation were the following:

1. Ref.No.14: The responsibility offered by the job to the job holder
2. Ref.No.30: Choice offered by the job for the job holder to pick his work colleagues
3. Ref.No.32: Influence exercised by the job holder on the work of his colleagues
4. Ref.No.37: The status of the job held by the job holder
5. Ref.No.38: The extent to which the job holder is involved in motivating others
6. Ref.No.39: The extent to which the job holder is involved in supervising the work of others
7. Ref.No.40: The extent to which the job holder is required to co-ordinate his work with that of others
8. Ref.No.45: The extent to which the job requires the job holder to exercise skills
9. Ref.No.50: The extent to which the job involves the job holder in external contacts

The other 35 primitives all had some likelihood of negative correlations.

When discussing sensitivity it was stated that some aspects of it would be discussed later. Further discussion on sensitivity involves the cross-checking of the primitives with low sensitivity against their form statistic.

For the whole set of results on the table of Figure 7.53, the average likelihood of negative correlations being 5.81, if the data on this table is reclassified in such a way that all likelihoods of negative correlations are in the 'lower class' and the rest in the 'upper class,' then the following picture emerges with respect to those primitives that had 'low' sensitivity:

15 of the likelihoods in the 'upper' negative correlation class, correspond with those primitives having 'low' sensitivity

9 of the likelihoods in the 'lower' negative correlations class, correspond with these primitives having a 'low' sensitivity

On the other hand of the 162 total likelihoods on the table of Figure 7.54, while

53 fell within the 'upper' negative correlation class,
109 fell within the 'lower' negative correlation class.

From the above numbers comparative ratios can be built; the comparative ratios and the interpretations attached to them are:

$\frac{9}{109} = 0.08$ = Likelihood of the joint event [low sensitivity and low negative correlation component]

$\frac{15}{53} = 0.28$ = Likelihood of the joint event [low sensitivity and high negative correlation component]

The above results might suggest why, at least, some of primitives, having low sensitivity did have these low values: it would appear to be the case, that when

there is lack of concordance or consensus on whether the loading on the primitive is negatively or positively correlated with the measures its sensitivity in job modifications may be reduced.

7.5. Conclusions

As way of recapitulation and summary the purpose of the study (as well as of the subsidiary study) reported in this Chapter was:

1. The data of the survey, reported in Chapter 6, had led to classification of organisations into three classes. Using this classification, the current study was an attempt to contrast the types of organisation on a small number of variables having implications for job design.
2. As insufficient information is available in literature, on how managerial jobs do in fact come to possess design characteristics, one of the primary aims of the study was the investigation of the job modification process. The concentration on the process of job modification was to facilitate the author in defining the characteristics that any methodology for job design would have to possess. The focus was on the process.
3. The concept of quality of the design of a job, the development of which is reported in Chapter 6, was to be further and systematically investigated. This investigation involved researching the effects of variables known to affect design of jobs on the measurement of the quality of the design of the job.

The data and results covering this item have been presented at length, and in a way speak for themselves. To the extent that the purpose of investigation is learning and the purpose of learning is to be able to apply the learning to situations which warrant some generalised conclusions, such are now presented. The conclusions follow the order in which the purposes have been stated.

1. Balance control in organisation

It may sound trite to say that organisations attempt to create a balance within themselves. The attempts at deriving at these internal balances was investigated by anchoring the questionnaire items on respondent's experience with respect to the time of his appointment to the position. It was found that the three types of organisation do in fact differ, one from another, over the space of organisational variables investigated.

Most of the comparisons were performed by deriving comparison indices.

Since it was clearly the case that over all the comparisons no particular organisation had, or tended to have the lowest or highest indices, it was clearly the case of organisations, within types, attempting to achieve a balance. The whole process could, thus, be depicted as shown in the diagram of Figure 7.55

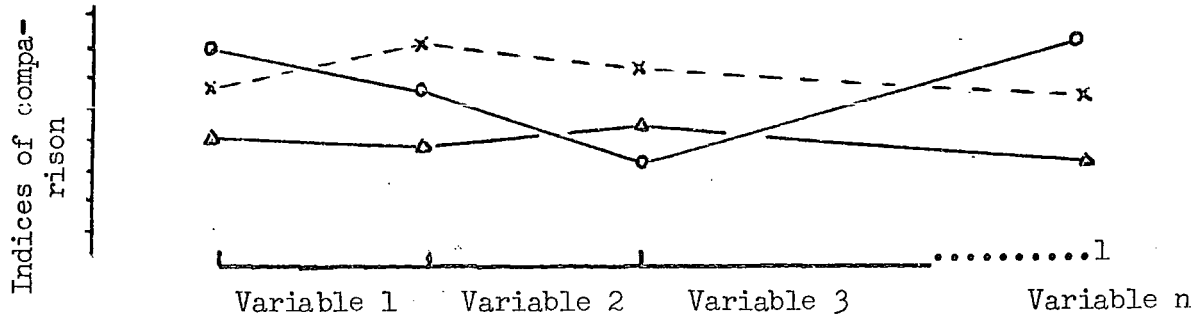


Figure 7.54: Organisational attempt to achieve a balance

However, and as depicted in Figure 7.54, more often than otherwise the greatest contrasts between organisation types involved the ad hoc type of organisation having the lower index. This would suggest that as far as job design is concerned their performance level is lower than that of the other two types.

Another way of looking at the data within the contingency framework would be like this: If an organisation which can be typified meets problems which the above classification suggests to be linked to its job design practices, then effort could be made to change the job design practices so as to alleviate the problem.

2. The process of job modification

The findings reported in the process of job modification are of fundamental importance. In fact, these are of so great importance that the whole of the next chapter, Chapter 8, is based on the primary data. So only a brief commentary will be made here.

One of the reassuring results of this chapter, for the author, was the eliciting of supportive evidence on his conceptualisation of the measures on the quality of the design of the job as a substantive entity. The acceptance of the author's events, techniques and goals model leads to the conclusion that the concept has acceptability for the purpose of use suggested.

This data also supplied evidence to suggest that single jobs, more often than not, cannot be designed in isolation. More likely than not changes

effected in one job will have implications for other jobs.

The data of Chapter 6 had indicated that job holders operationalise their own jobs; this chapter leads to the conclusion that although this may be so, the influence of the role set dominates - jobs cannot, by and large, be given substantive form by the job holder on his own.

3. Substantive elements in the design of jobs

This part of the data clearly refutes the 'one-way' type of job loading attempted by Herzberg. It further provides evidence to suggest the weakness of the Hackman and Oldham model, based on 13 primitives, of which only six are regarded by these researchers, as the predictors.

However, this part of the study also suggests that one should be cautious. The findings reported here are based on data from 118 jobs in 9 organisations only. The comparison statistics successfully used here may be linked to the individuals but, moreover, and perhaps even more strongly, the values which came to be assigned to them may be a reflection of the state of jobs. To explain this consider the primitive 'Fairness in the demands made on job holder'. Now, if the initial state of the jobs were such that there was a great deal of fairness even prior to modification being introduced this is highly probably the reason for its low sensitivity statistic. In another organisation, the presence of unfairness could lead to higher values for sensitivity. And fairness to one variable which will be discussed again in Chapter 11. Overall then, if jobs are being analysed for redesign, it could be suggested that even primitives with low values on the comparison statistic should be tested and evaluated.

Furthering the research

While for the survey reported in Chapter 6, the author's primary guide was literature, the study reported in this chapter was guided both by the literature and by the results of the survey. The results of these two studies, with secondary evidence from literature, went into the definition of the characteristics of a managerial job design methodology to which the whole of Chapter 8,

the next chapter, is devoted.

These studies, therefore, not only supplied supportive evidence for the author's original thinking but also developed and extended the lines of thought originally envisaged but hazily held.

Chapter 8

CHAPTER 8

ANALYSIS AND SYNTHESIS OF JOBS: METHODOLOGICAL AND APPLICATION CONSIDERATIONS

In this chapter, building on the literature discussed in Chapters 1-5 and the studies reported in Chapters 6 and 7, are presented the author's conceptualisation of application considerations. The chapter starts with the delineation of operating characteristics that the job design methodology would have to possess. The 'would have to possess' element is defined at three levels: Primary, Additional and Preference enhancing.

The defining of these characteristics, and in some measure as a consequence of their definition, leads to the postulation on how the job design could practically be conducted. The units of the job design process are discussed in connection with applied job design. From a theoretical viewpoint the concept of 'units' has immediate relevance to job design applications.

The discussion on 'units' leads to a discussion of how job design could be undertaken in an organisation of unspecified size or structure.

The last section of the chapter describes the author's search for a methodology having the requisite characteristics and the evaluation of one methodology which, notwithstanding certain weaknesses, fulfils all the criteria and was thus chosen by the author for testing in a study which itself is reported in Chapter 9.

This chapter consists of the following 8 sections:

8.1 Primary consideration for the job design methodology
8.2 Considerations of additional characteristics
8.3 Accepting enhancing characteristics
8.4 Application of job design
8.5 Ways of conducting a job redesign exercise
8.6 A methodology for job design
8.7 Job audit: the EA methodology based technique for job design
8.8 In conclusion and thence

8.1. Primary considerations for the job design methodology

A methodology is a means to an end. Figure 8.1 depicts a diagrammatic abstraction of the concept methodology , in the context of job design, held by the author.

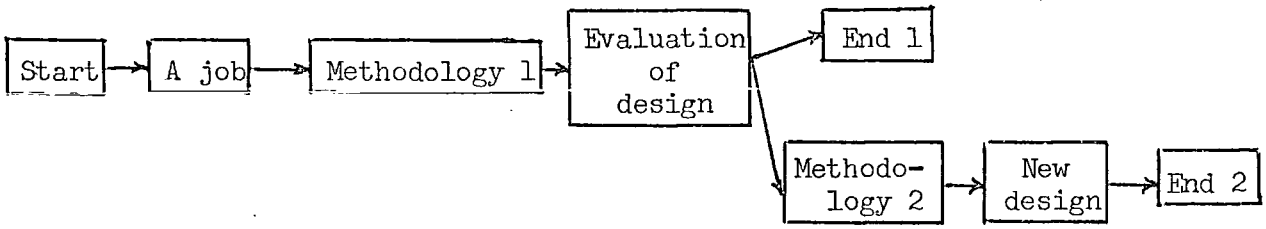


Figure 8.1: Author's concept of job design methodology

In operational terms, then, the methodology should provide or facilitate:

1. The description of the job
2. The evaluation of the design

And where the evaluation framework indicates the original design to be wanting

3. The redesign of the job
4. A description of the redesigned job

The process of evaluation requires the following:

1. A framework for evaluation
2. The experience-in-job of (i) the job holder, and (ii) the organisation

Thus any job design methodology, at the most fundamental level, would be required to handle two types of information:

1. The description of the job - based on the situation extant
2. The experiences-in-the-job of (a) the job holder, and (b) the organisation

In Figure 8.2, which is a schematic representation of the components of methodology, the two types of information, covering the three sources, are shown in the left hand portion of the diagram.

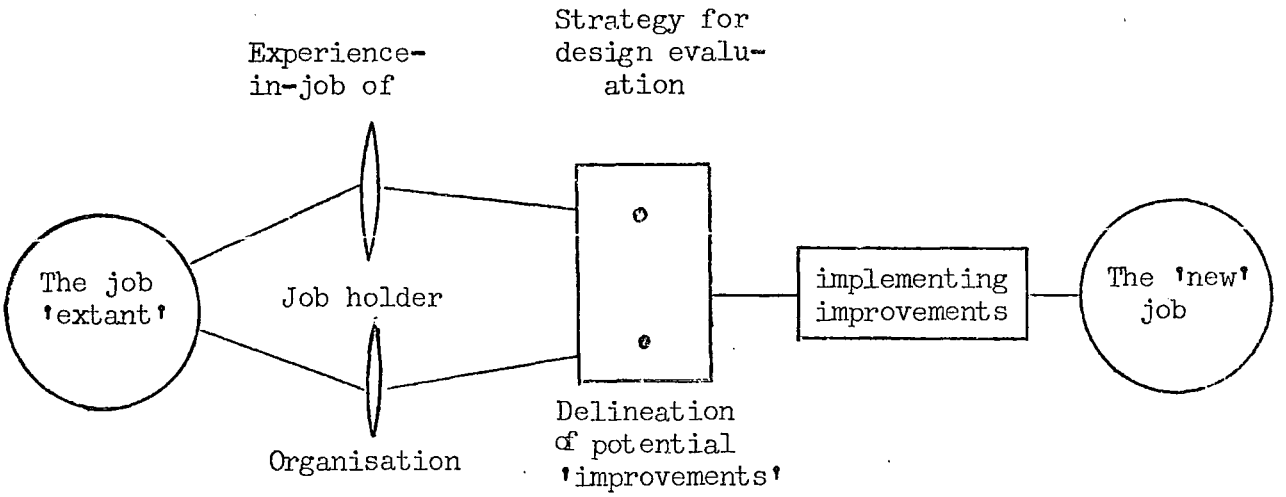


Figure 8.2: Requisite components of methodology

In accordance with, and in furtherance to, the analytic techniques of input-output analysis, offered by the General Systems Theory, the two types of information, introduced in the foregoing paragraph, will now be discussed.

As the material being presented here is also related to, and necessary for, the contents of Chapter 11, only those parts of the substantive argument the author thinks minimally necessary here will be presented.

Figure 8.3 represents an 'extant' job analysed in terms of inputs and outputs, from both the job holder's and organisational perspectives.

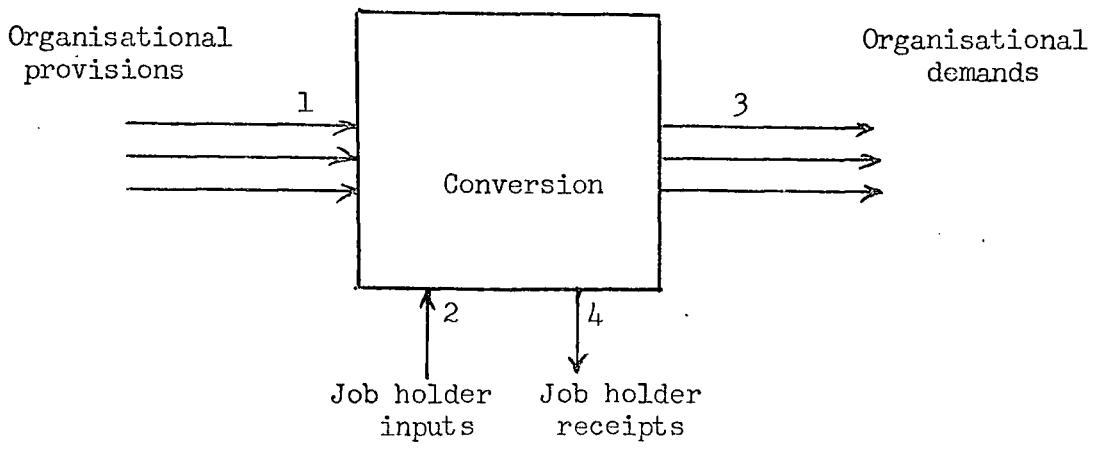


Figure 8.3: Input-Output analysis of a job

With reference to Figure 8.3, and in accordance with the research tradition being pursued in this thesis, the two types of inputs (marked (1) and (2) in the figure) and the two types of outputs (marked (3) and (4) in the figure) together constitute the description of the job.

Note 1: The organisational demands (marked (3) in Figure 8.3) may not always be material; they could, and are often likely to, include constructs like 'loyalty to the organisation', 'adherence to organisational rules and regulations', or the more nebulous one like 'operating within the climate and character of the organisation.'

Note 2: The job holder's receipts (marked (4) in Figure 8.3) comprise of determined elements like yearly salary, and the less determined elements like performance bonus and profit sharing but also (1) provisions for the future - pension schemes; training, on the one side, to combat job obsolescence, and on the other side, provide for job mobility either upwards within the organisation or outwith the current organisation.

Note 3: The organisational inputs into the job (marked (1) in Figure 8.3) include such items as position title. The importance of position title as a job design variable is deduced by the author from Mintzberg (1973) and Scholefield (1968) both of whom discuss the concept in the context of intra-organisation contacts. However, the arguments presented are likely to affect within-organisation contacts as well. Moreover, the organisational inputs include items like authority, funds, manpower, plant and machinery. Furthermore, the organisational inputs include the less material items like the good (or bad) will that the job holder either inherits from the outgoing person (when assigned to vacated position) or that is generated as a consequence of not his own actions but of others in the organisation.

Note 4: The job holders' inputs to the job (marked (2) in Figure 8.3) include the time, the skills and the abilities that the job holder expends or utilises in the course of work.

Before discussing experience-in-job, certain terms and concepts derivable from Figure 8.3 will be discussed; these will be found useful in the discussion on the aforementioned subject.

The concepts of effectiveness and efficiency originally introduced in Chapter 4 will now be related to the inputs and outputs as narrated in this section.

Effectiveness as a concept is a univariable measure although the method of measuring could be of the binary type or a rating scale type. Depending on the particular method adopted effectiveness simply shows either whether or not or the degree to which the outputs meet the expectations. For the organisation, then, the effectiveness of the job (as shown in Figure 8.3) would be concerned with items marked (3) in the diagram. That is to say, the measure is based on the extent and degree to which the job holder achieves the desired results. Note that the effectiveness measure in no way involves the inputs; nor is the conversion process given any consideration.

Similarly, effectiveness from the individual's perspective is derived solely from the extent and degree to which the outputs received match the expectation of these outputs.

Efficiency, on the other hand, is a ratio measure; it measures the outputs per unit of input. Discussion on the topic of efficiency more often implicitly, but sometimes explicitly, recognises the conversion process.

For the organisation, efficiency would be measured in terms of the organisational outputs generated by the job holder per unit of organisational inputs. In evaluation of efficiency the recognition of the process permits consideration of the kind: whether the managerial job holder in order to be effective pushed his subordinates to the extent that they became alienated. With reference to Figure 8.3 efficiency of the job, from the organisational perspective, would involve items marked (1) and (3).

For the job holder, efficiency would similarly be derived in terms of items (4) and (2) in Figure 8.3.

Experience-in-job can now be discussed in terms of effectiveness and efficiency, of the job contract, the two concepts just developed. The discussion will be conducted with the help of the diagram of Figure 8.4 and in terms of the job holder's experience-in-job.

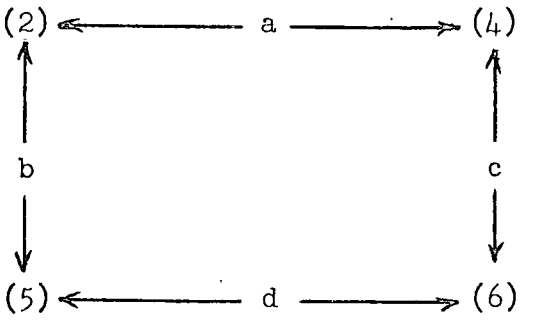


Figure 8.4: Sources of experience-in-job for the job holder

In this diagram the four main components are labelled (2), (4), (5) and (6). This diagram is a development from Figure 8.3 and components (2) and (4) depict items labelled the same in the earlier diagram. The remaining two components stand for:

Components labelled (5) ... the potential the job holder is capable of, and willing to contribute
Components labelled (6) ... the rewards/outcomes expected by the job holder

The discussion will be based on type and degree measures being attached to each of the four components of Figure 8.4, and will be conducted in terms of:

(i) The absolute values of the four components - the effectiveness
(ii) The relative values of the four components, shown by the four relationships marked a, b, c and d - the efficiencies.

Source 1 (relationship a) is the job 'extant' efficiency. The individual may or may not be satisfied with the rewards obtained compared to the effort input.

Source 2 (relationship b) the individual may regard the demands of the job as being above (or below) his potential for contribution, in terms of time and abilities

Source 3 (relationship c) the job holder may regard the rewards as being below (or possibly above) his expectations

Source 4 (relationship d) the job holder may have definitive views on possible equilibrium values of 'what he wants' compared to 'what he can contribute'. All these relationships are considered simultaneously, but with respect to different time domains - the present, the future and possibly what was in the past. Further, the experience-in-job of the job holder is based not only on the values obtained for these ratios for himself but also on what he perceives these ratios to be for his colleagues and others known to him.

At this point the material presented encroaches more and more on the contents of Chapter 11, so the discussion on this topic will be terminated here. Suffice it to say, the organisational perspective of experience-in-job could be analysed in a way analogous to the above analysis for the individual's experience-in-job.

The artifact of depicting separately the inputs and outputs for the individual and the organisation may have shifted the focus of attention from the concern they have in common for the effectiveness and efficiencies discussed and alluded to in the foregoing paragraphs. This will be discussed next.

Common concern

The two parties to the job contract which gives rise to the individual/organisation interface should be equally concerned with the two types of effectiveness and efficiencies discussed above - the one type focusing on the individual and the other type localised on the organisation. This is the gist of the job design paradigm as the author sees it.

Summary of section

The basic requirements for a job design methodology could be summarised as possessing ability, and lending itself to, analysis of the job in terms of inputs and outputs both for the organisation and for the individual. In other words, the methodology should enable the job designer(s), whoever these may be, to draw a job description and a description of the experience-in-job of both the job holder and the organisation. Note, however, that the conditions for the job design methodology, discussed here, are of the type 'necessary' and by no means of the type 'sufficient'. Further characteristics are discussed in the next section.

8.2. Considerations on additional characteristics

In this section will be discussed those operating characteristics the possession of which will make a methodology sufficient for managerial job design. The material presented has either been directly discussed in connection with methodological arguments or is derivable from the material presented in earlier chapters. Discussion on each aspect will therefore be as brief as possible.

8.2.1. Different analysis of the managerial job

In Chapter 3 are presented a large number of models proposed by different authorities for analysing the managerial job. For example, Scholefield Model, depicts the managerial job having the following elements:

- Operating activities
- Innovating activities
- Stabilising activities

The suggestion being made here, therefore, is that the description of the job derived from the use of the methodology should be such that the various activities can be appropriately tagged with the appropriate classes from the Scholefield Model. The reason for suggesting that the methodology should have this power or ability is that in the course of analysis of the job(s), the cause of the problems located or areas of improvement delineated may be relatable to, say, lack of innovating activity on the part of the job holder. And this he might be doing because of too much concentration on operating activities.

As suggested above, given that the models discussed in Chapter 3 may be useful for problem diagnosis or location of opportunities for re-design, it would therefore be a necessary requirement for the job design methodology to handle the information in such a way that different analyses are possible.

The above conclusion would find support from the writings of other authorities, e.g. Marples (1967) and McIsaac (1977), among others.

McIsaac's suggestion is that the activities of the job should be classified according to the split: managerial/essential.

Marples, discussing the subject from the location of problem perspective, writes:

> ".... since half the manager's time is devoted to so few problems a detailed examination of them will go far towards telling us whether he is playing the part expected of him. The problem can be compared with the expectations of his role set either by collecting the expectations first and relating the problems to it, or by describing the problem and asking the manager's colleagues to comment on the appropriateness of the attention being paid to them".

The above quote from Marples besides supporting the current argument on the methodology - that it should support different types of analysis - is useful, from yet another perspective. In Section 8.1, it was suggested that the individual provides his own experience-in-job. As to who provides the organisational perspective was not discussed. Marples, as could be deduced from the above quotation, is suggesting that the organisational perspective is given by the members of his role-set. This aspect will be further discussed passim in this section, and in detail in the next section.

8.2.2. Simultaneous documentation of the description of the job and descriptions of the experience-in-job

Given that the organisational experience-in-job comes from the role set and given that the organisational inputs, and outputs, are also provided, and accepted by the members of the role-set, deductively, it would contribute to the efficiency of the methodology were it possible to collect the two types of information at the same time.

Further, if the job holder regards the balance between his own outcomes and inputs as incorrect he should be able to suggest the imbalance and nominate the person within his role-set (or outwith the role-set) whom he holds responsible for the imbalance.

Stewart's (1979) work on choices in the managerial job is pertinent to this discussion. In Stewart's work choice is one among the three components of her model. Stewart's work is pioneering and difficult to evaluate as some elements of her classification are not clear: it is often difficult to see whether the choice being considered is an input choice or an output choice, e.g. adopting the input-output analytic framework, how would the following be classified:

1. Choice in external contacts
2. Choice in roles
3. Choice in participating in management of the wider group?

Nonetheless, the way Stewart's work relates to the current argument is this. The job holding manager, through the exercise of 'choice' may downgrade the importance he attaches to certain aspects of his job. The particular members of the role-set affected may consequently receive outputs at variance with the quality/quantity/timing they feel to be necessary.

Thus, since not only the description of the job but also the description of the organisational experience-in-job is articulated by members of the role-set, it should be possible to document the two aspects simultaneously.

8.2.3. Analysis of procedures and tracing the individual's contributions to different systems and procedures

The job design methodology should provide a means of determining the various organisational procedures and systems the individual job holder is connected with and what specific contribution he makes with respect to each connectivity. By way of example, consider the recruitment process or procedure as shown in the diagram of Figure 8.5.

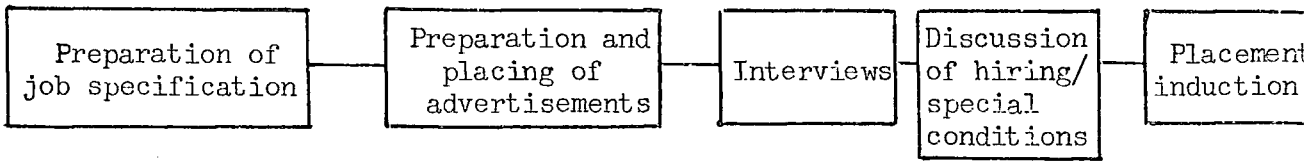


Figure 8.5: An elemental classification of the recruitment process

Given the above steps or elements to the process (which incidentally could also be analysed in terms of such schemes as planning, execution and control, as discussed in Chapter 3), a given manager for whom a subordinate is being recruited may find himself involved in certain steps and not in others; another person may find himself involved in certain aspects and not in certain others. Brown (1971) gives the case of a manager who was not responsible for the decisions on the hiring of his subordinates and how this led to difficulties. The process analysis of the various systematised activities would then be important for determining whether the individual whose job was being analysed in fact participated in the various steps where his contribution would be desirable.

Another example could be framed in terms of a production manager not participating in the progress review meetings of product development but invariably finding himself responsible for starting immediate production when the development boys have perfected their 'baby.'

From the above, it could be concluded that a job design methodology which permitted the tracing of steps in procedures and the individual job holder's link to the various steps, would be superior to one that did not permit this.

8.2.4. Simultaneous evaluation of the quality of the design of several jobs

For reasons extending from the delineation of the methodology characteristic in the foregoing subsection, the methodology should permit simultaneous working on several jobs. However, the characteristic now being defined has to do with the simultaneous evaluation on the quality of the design of the job, for several jobs.

As the characteristic under discussion is closely related to the method of application, it will be added to in Section 8.4, under the title 'Units of analysis.'

8.2.5. The methodology should preferably be negotiation orientated and cover transactions

The results from the survey and especially from the job modification study, reported in Chapters 6 and 7 respectively, lead strongly to the conclusion that managerial jobs are designed through the process of negotiation.

Another perspective on negotiation is that roles, if and when not clearly defined, could only be made clearer through the process of communication. Rosen (1961) suggests that when individuals do not receive adequate communication on the role demands, there is a tendency towards having low commonality in "values" between the role-set.

The work of Wieland and Ullrich (1976) could be interpreted as supporting the current argument that those methodologies that are negotiation orientated are to be preferred. These researchers, on the authority of Strauss support the viewpoint that the functioning of an organisation is less structured than rules, regulations and static job descriptions would lead one to believe. Basing

their thesis on the "fluid" nature of organisations, Wieland and Ullrich suggest that the way to grasp how organisations operate is to regard negotiation as the basis for shared social understanding between the members and to regard their acts as stemming from some negotiation resulting in mutual agreement.

Another perspective supportive of the above stated preference for negotiation based methodology comes from Sayles (1958), who suggests that in any job there is an element of "trading". Trading involves both transactions and negotiations. Therefore, the methodologies which are negotiation-orientated possessing the additional property of covering transactions would be preferable to those which do not have these properties. Note that transaction, in the context of jobs, implies 'what one individual does for the other' and 'what the others do for him'. A special type of transaction is 'what the individual does for himself'; and this, in the context of jobs, covers the transformation processes associated with the job - it is the 'value adding' bit.

As some form of dialogue is implied in negotiation and given that trading is recognised it could be deduced that certain understandings are reached. The reaching of understandings could also help remove role ambiguity and role uncertainty - two much discussed topics in organisational literature (see Chapter 4).

8.2.6. Constellations and centres: freedom from structure and ability to handle different workflows

The structure of the organisation, as discussed in Chapter 4, implants features to the jobs. The inter-connectivity of one job to others is a function both of the nature of form of work as well as of the imposed organisational structure. But the structural interconnectivity can be deceptive and hide the actual work flow. Further, given that when the basic nature and form of work is the same, two or more organisations may adopt different structures, e.g. hierarchical or matrix, etc., when analysing jobs for the purpose of locating areas where improvements may be desirable, or possible, some of the opportunities for improvement may involve modifications to the existing structure. If areas for improvement could be called 'problem areas', then the suggestion being made is that some of the job problems may be the existing structure.

From the above argument, a desirable characteristic for job design methodologies would be their applicability to any structural form of the organisation; be the form hierarchical, matrix or whatsoever. The methodology should therefore be able to focus on work and jobs. The methodology, in its applications, given the earlier defined characteristic of simultaneous evaluation of a number of jobs, could then be said to be capable of holding the jobs under evaluation as a centre of a constellation of other jobs , without interference from the prevalent structure.

Freedom from structure while able to handle different work flows, would allow the same methodology to be used not only in different organisations but also in different parts of the same organisation, where changes in the form of work may be reflected in different technology and therefore different structures.

That the application of job design in one part of the organisation may arouse interest in other parts of the organisation is often reported in literature. An aspect of applying job design to one part of the organisation and not the others is brought to notice by Bishop and Hill (1971) who reported that the 'positive' effects of redesigned jobs were nullified by increased complaints from those still doing undesigned jobs. Earlier, Strauss (1955) concluded from a study conducted by Bavelas that the workplace:

> ".... is a social system made up of mutually dependent parts of a system. It may be dangerous for management to try a new approach in one part unless it is prepared to extend this approach to the whole organisation".

So, from the above argument, it could be said that methodologies which were specific with respect to either organisation form or work flow would neither have general applicability nor acceptability. The low acceptability argument gains support from the editors (1974) of Personnel Management who write:

> "Employers, although paying lip service to the need for experiment are all too often afraid that any genuine innovation will simply lead to demands for equal or better treatment on the part of their other colleagues".

All the above arguments summed up lead to the conclusion that methodologies which can be made to focus on jobs and systems would be preferable to those which were bound to some particular organisation type.

8.2.7. Property to define problems/opportunities specific to the application - portability

That the methodology should be capable of application in different settings has been discussed in the foregoing subsection. That could be regarded as portability, as well. However, the concept under discussion now is the property of the methodology to draw out problems/opportunities specific to each application. Note, it is not being suggested that in two or more applications the same set of problems/opportunities would not emerge; but simply that if the underlying problems are different then these specific-to-application problems should emerge.

In this what is being asked for is simply an extension of the common medical practice - each patient defines his own symptoms, and the doctor does not assume the underlying illness. Of course, in medical practice, once the patient has described the situation up to a point, the doctor may prompt for specific information to facilitate accurate diagnosis; so should it be in the case of organisation specialists, working in job design. That static evaluation of the job, i.e. evaluation of the design of jobs according to preconceived notions of what constitutes good design, on the basis of job characteristics only, may not be appropriate has been discussed at length in Chapter 5 - Lorsch and Morse (1974), Hulin and Blood (1968) and Wild and Birchall (19), to name only a few authors, have all at various times argued for adopting a contingency perspective for designing jobs. Probability of a methodology, defined in the above sense, would, therefore, be a desirable attribute.

8.2.8. Participation of job holder, his role-set and specialists to the process

The study reported in Chapter 7 suggested strongly that the role-set is a major determinant of the design of the job. Other researchers also report findings similar to those reported in Chapter 7. In fact Marples (1967) writes:

> "The actual behaviour of the manager is a function, at the very least of his role set, his role perception both as a manager and as a particular manager, of the appropriateness of these concepts to his task, his skill in translating his concepts with actions and his efforts to modify the system of which he is a part so that it is better adopted, in his view, to the task which confronts it, and him".

The above quotation from Marples also has a bearing on the exercise of influence, a topic which will be discussed in Section 8.2.9, but worth pointing out now. Continuing with the argument of the role set determining the shape of the job, Marples gives the following engineering analogy:

> "Just as a study of a joint in an engineering structure may be made if the adjoining members are replaced by force system approximately equivalent to the interactions between the joint and the members, so the study of the individual manager requires at least the provision of a system of equivalent influences in order that his present behaviour can be subjected to critical analysis".

For job design purposes the force of Marples logic lies not in use of the word "critical", except in so far as the experience-in-job of these members of the role set is concerned, but in that the total picture of even the job documentation is likely to be incomplete without the involvement of the role-set.

Another aspect of participation by the role-set in the determination of the design of a job comes from researchers investigating the effect of participation on performance. Latham and Saari (1979) and Quick (1979) provide evidence suggesting that participative or dyadic goal setting, with training for this mode of operation, where necessary, enhances performance and improves job holder's perception of own work performance.

All the above arguments strongly recommend that the job design methodology should accommodate role-set participation. Further, given the evidence in the study reported in Chapter 7, as well as job design literature, where most applications have been undertaken either totally, or with support from professional job designers, the methodology should permit third party involvement as well.

8.2.9. <u>The methodology should permit the job holder to explore the boundaries of his job</u>

One of the major themes to emerge from Likert's (1967) work is that exercise of influence upwards in the hierarchy brings the subordinate job holders the assistance and support they need in acquiring organisational resources which facilitate higher performance and satisfaction.

Broad (1970) putting the case more bluntly and specifically writes:

> "Whereas for years we have been exhorting our management people to push their bosses for more freedom, now we must also try encouraging them to contribute more and more to areas of the company beyond their assignment.

> What we should say, in effect, is 'Success for you and the company requires you to gamble with the dangers inherent in both pushing your own boss for more freedom to act and in reaching out into the other bosses' departments' ...."

Further, the job design survey reported in Chapter 6 had provided evidence indicating that managerial job holders operationalise their own jobs to quite an extent. The possibility of the job holder and his role-set exercising control over the methodology would therefore serve the operationalisation process.

Allowing the job holder and role-set control over the methodology in the operationalisation of a job could serve many purposes, one of which is discussed below.

Cumming and Schwab (1978) discussing feedback on performance define amount and frequency as important parameters. They then relate these parameters to three purposes or uses of information acquired in feedback. The three uses discussed by these authors are:

1. Development action programme
2. Maintenance action programme
3. Remedial action programme

Cumming and Schwab found the amount and frequency of feedback information for the three types of action to be different.

Thus, if the job design methodology, firstly, permitted job holders to explore the boundaries of their own jobs and, secondly, to make adjustments on parameters as illustrated above, then the methodology would indeed be serving well its intended purpose.

Conclusions to characteristics defined so far

The characteristics defined in this section and the one defined in the foregoing section are the necessary and sufficient conditions for the job design methodology proposed by the author. However, a methodology possessing these characteristics and no other would be a specialist's tool - professional job designers or at least those devoting a fair amount of their time to job desig It would be a tool more or less serving a specific purpose - job design.

It was the author's contention that such single purpose tools may not receive ready acceptance within organisations where the occurrence of jobs

designed solely by job designers were found to be negligible (see Chapter 7). In the next section are discussed those properties which, if possessed by the methodology, would make for ready acceptance.

8.3. Acceptance enhancing characteristics

In this section will be discussed a number of characteristics which while neither necessary nor sufficient on their own to facilitate job design, would nevertheless increase the likelihood of organisational acceptance for a methodology which possesses them.

The crux of the matter is this: variants on the descriptions of the job as well as description of the organisational experience-in-job are often available, in one form or another in most, but not all, organisations. For example, the table of Figure 8.6 presents data from the survey reported in Chapter 6 on the incidence of certain events and processes which generate, use or require the type of data under discussion.

Event or process	Incidence rate
1. Objective setting	75%
2. Job evaluation	61%
3. Performance evaluation	85%
4. Training programme	79%
5. Job descriptions	78%

Figure 8.6: Incidence rates of certain events and processes

A logical inference from the above data is that organisations are likely to possess some systems/procedures, i.e. methodologies, to accomplish the above listed tasks. It is worth noting that some of the systems and procedures may even be custom made for the organisation's in-house usage. It is not the purpose here to discuss, with respect to specific organisations, how well the above listed activities may be performed or how useful the results are. In the study reported in Chapter 7, the responses to the query on "the most useful ways the participants, on initial appointment, learned the content of their jobs" indicated job descriptions to be of low utility.

A conclusion from the above argument would be that managerial position holders may already be involved in the use of a number of methodologies, ostensibly carrying the same type of information as would be carried in a methodology which only possessed the necessary and sufficient characteristics.

These managers, then, when presented with a new methodology which was useful only for job design may, in all likelihood, react negatively - i.e. refuse to accept, on cost/benefit grounds, the new methodology. The concept of cost/benefi is important and this will be briefly discussed.

The managerial employee, were he involved in the type of activities shown in Figure 8.6, is likely to be spending a fair amount of time going through the routines of the different processes - either in connection with performing them on his subordinates or being subjected to, in turn as a subordinate, by his own superordinate. The manager may also have developed his own opinions regarding the utility of each of the above systems. Such a manager, when offered a system with minimal necessary and sufficient attributes may on grounds of - cost, i.e. time, known and benefits undefined - may not be attracted to it. Rather such a manager may even be antagonised.

Support for the contention that some form of cost benefit analysis may be behind managerial evaluation of such systems could be drawn from Ivancevich (1972). While discussing the deterioration in the MBO popularity, Ivancevich on the authority of Raia asserts that the reasons for jaded enthusiasm was the "generation of extra work for managers". Although the statement is written in terms of "extra work", the implication is of extra work which does not bring in the extra productivity, i.e. benefits to cost consideration.

Current research into managerial information systems, deductively, also favour the employment of multi-use information systems (see Luke (1975)). The supportive logic behind this suggestion revolves around the amount of redundancy that is inevitable in systems designed for specific and yet closely related purposes. Thus a single system serving two closely related purposes would be preferable to two distinct systems serving the two purposes independently.

However, there is a body of literature to indicate that familiarity with techniques enhances their acceptability. For example Birchall, Carnell and Wild (1978) write:

> "... it should be noted that any change programme which requires or necessitates the adaptation of procedures and attitudes which represent major breaks with tradition or existing practice or custom, is more likely to encounter obstacles and problems and is less likely to be

> successful than where a strategy derives from existing custom and practice within the organisation and employees existing frameworks and procedures".

The author while recognising that novel and challenging ideas may require equally novel methods for tackling them, nevertheless recognised the existence of the mentality depicted in the above quotation. The way around this hesitancy in adopting new methodology, the author reasoned, was to have the new methodology perform some of the existing functions. The fact that it might require new strategy was there, but at least it should provide and produce some of the existing and therefore familiar results.

In conclusion, the author decided that the job design methodology should have not only the minimal necessary and sufficient attributes but also be able either to replace or support systems for specific activities commonly found in organisations.

Some characteristics likely to enhance the acceptability of the methodology, in the way suggested above, are now discussed.

8.3.1. Support for, or as a method of, appraising performance

The discussion on this topic will be from two perspectives: the use of language and role-set participation. Both have important bearing on the conduct of appraisals.

8.3.1.1. The use of language

Barrett et al(1958) and his colleagues report a series of experiments conducted on different aspects of performance appraisal. In the specific study referenced, the format of the rating instrument was investigated. Four distinct formats used in the experiment were as shown in Figure 8.7. The outcome of the experiment was that Format 3 came out best on inter-rater reliability. Barrett et al attributed this superior performance to the description providing an anchor for the rater in the assessment process. Obviously, the appropriateness of the "Term name" could be regarded as helpful.

Format ref.no.	Term name	Term definition	Behavioural description of rating scale points
1	Present	-	-
2	-	Present	-
3	Present	-	Present
4	-	Present	Present

Figure 8.7: Four formats used to evaluate performance appraisal by Barrett et al (1958)

For the purpose at hand, the results of the above study indicate the necessity of using language appropriate to the functions in each job for the purpose of appraising the performance of the job holder. A way of attempting to ensure unequivocal language would be the job holder and the rater between them defining the term name and producing the appropriate behavioural description. If several jobs of the same time type are involved, a discussion between the affected partie could lead to standardisation. On the other hand, such a discussion may show the differences that in fact obtain in ostensibly similar jobs.

A desirable characteristic for a job design methodology then would be that it should permit documentation of the job, and thence the organisational experience-in-job, in free text, i.e. in language the rater and the ratee could make specific to their own circumstances.

8.3.1.2. Role-set participation in appraising performance

Brooks's (1955) investigation into managerial effectiveness led him to conclusions, two of which are relevant here. Brooks found that:

1. "Estimates of an executive's effectiveness may differ, depending on whether he is being rated by his superior or by his subordinates".

2. "Superiors have certain expectations of him, so do his subordinates. It is essential, however, for him to meet both groups of expectations".

For job design, then, Brooks's conclusions on performance appraisal, which has earlier been stated in this chapter as the organisational-experience-in-job, indicates the desirability for including the role-set in appraising performance. A methodology which permitted role-set inclusion could therefore be regarded as superior to the ones which do not permit this.

The above discussed two aspects of performance appraisal indicate how improvements in the conduct of this process could be introduced.

If a job design methodology were such that it could be used for performance appraisal with the above two added advantages, then it is likely that it would be more readily acceptable.

8.3.2. Focussing on the jobs of individuals or of the team as an entity

In job design the unit of measurement remains the job; this aspect is further discussed in Section 8.4. However, in some instances the execution of work is undertaken by groups or teams of individuals. This is especially so in project type of organisation but operating units within hierarchical, and naturally arising groupings within organic, organisations could also be so regarded.

Therefore, it could be concluded that were the job design methodology such as to facilitate focussing not only on the work responsibilities of an individual but also of groups of individuals it would find more ready acceptance. This property would enable work designers and organisation designers (as opposed to job designers) to concentrate on the macro level while job designers concentrate on the micro level.

8.3.3. Continuous recording of changes in the design of a job

It could be interpreted from Penzer (1973) that the design of a job is something that has to be continuously monitored. A derivative of this line of thinking would be that changes of the kind that could affect the design of the job should be continuously recorded. However, changes, as discussed in Chapter 7, can occur slowly and minutely and have a cumulative effect on the experience-in-job. In Chapter 7 was presented the viewpoint that it is these small changes which eventually call for legitimisation and it is the need for legitimisation which could be regarded as the trigger for modifications to jobs.

The continuous recording of small changes could then act as a trigger for the legitimisation and modification processes, i.e. if the changes were continuously recorded, then either the job holder or his role-set, discerning either imbalancing movements on the three measures of the quality of the design

of the job (or lack of movement itself being the cause of imbalance) could then attempt to initiate corrective or legitimisation actions.

Continuous recording would also help in another way. Wanous (1973) discusses job previews as a method of recruiting people who would stay with the firm. If the incoming person were being assigned to a position being vacated, it could be surmised, the availability of continuous documentation through the potential of providing shifts in the job could serve the retaining purpose even further.

Conclusion to delineation of characteristics for job design methodology

The author has endeavoured to define features for the job design methodology which, as a consequence of his own research or through critical reading of the literature, he thought salient. These characteristics could be classified as:

(i) necessary
(ii) required
(iii) desirable

In the next section is discussed how a methodology possessing some, or more, of the features discussed here could be applied.

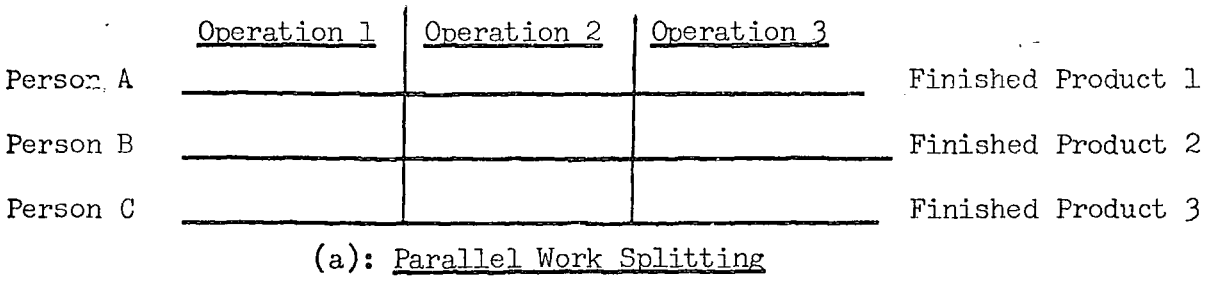
8.4. Application of job design

Through a logical build up in this section the author seeks to explore how job design should be applied in practice.

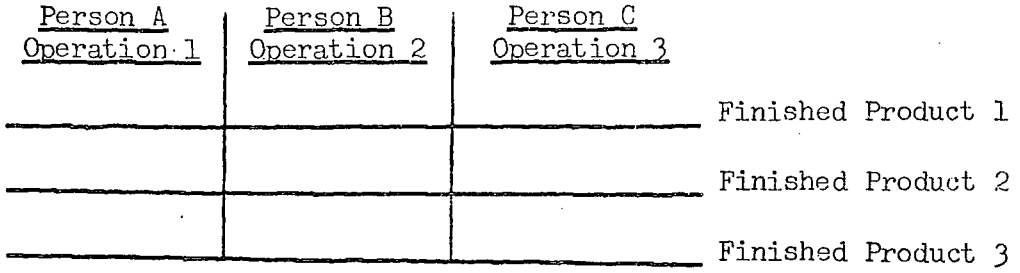
8.4.1. Work - the underlying connectivity between jobs and positions

Work is performed in operations, and operations can be split into sub-operations which in turn could be split into sub-sub-operations; the splitting process could be continued until for the human operator involved the twitching of muscles can be observed and documented (Annett et al (1971)), or perhaps even the concentration and flows of the bio-chemicals in the body itself could be analysed.

However, the purpose here is not to analyse the atomic and sub-atomic constituents of work; for the purpose of job design interest stops at the level of single individuals who, on the authority of Newman and Rowbottom (1973), being unable to pursue their personal interest on their own accord come together so as to contribute and gain through co-operative endeavour. While for some the contribution could be money, for others it is their labour - i.e. performance related abilities, skills and know-how. Labour is expended in accomplishing work. The work undertaken by an individual could be classified by the parameters: type, quality, quantity and timing. Focusing on the work element of the co-operative situation, if a single person cannot handle the total work on all the four parameters, the work is split into parts. The diagrams, a and b, of Figure 8.8 depict two basic work splitting methods.



(a): Parallel Work Splitting



(b): Sequential work splitting.

Figure 8.8: Basic Work Splitting Methods

Diagram (a) of Figure 8.8 shows three persons each performing three distinct operations one after the other. Each person, on finishing the three operations, starts with Operation 1. As at any movement, firstly each one of the operatives could be performing on the same operation, say 1 (or 2 or 3), and, secondly, each operative performs the subsequent operations only on the items for which he has performed the earlier operations, this method of work splitting has been labelled parallel work splitting.

Diagram (b) of Figure 8.8 shows three operatives each one of whom will repeatedly perform the same assigned operation (say, either operation 1, or operation 2 or operation 3). As operative C must wait till operative B has totally completed his operation, and B in turn has to wait for A to complete his operations, this method of work splitting has been labelled sequential work splitting.

Note that the labels assigned to the methods are according to organisation of operatives.

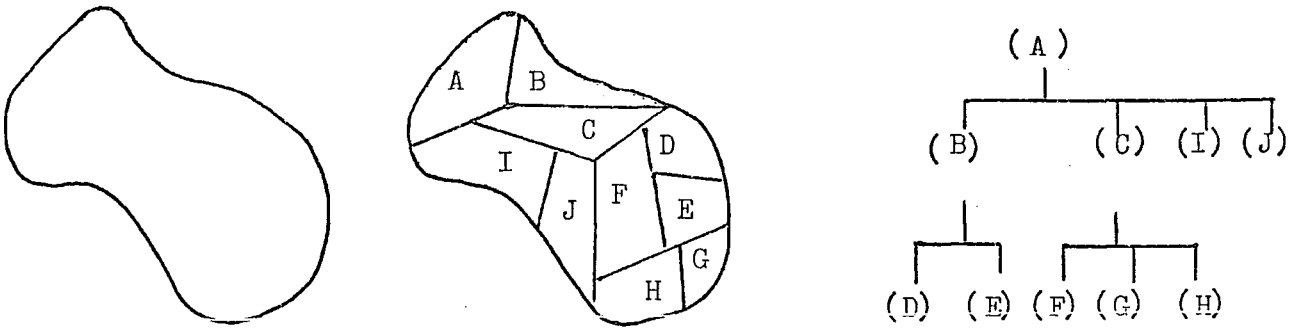
Note also that sequential splitting, as shown here, begets a rudimentary form of work specialism.

Each of these two forms of work splitting offers some advantages and some disadvantages.

From these basic configurations depending on the requisite loading on the parameters of work type, quality, quantity and timing, more complicated, but essentially composed of these two basic forms, designs can be obtained. Some aspects of immediate relevance arising from complex designs will now be discussed.

8.4.2. Determination of one job leads to the determination of other jobs

The agreement to co-operate that was discussed in the foregoing subsection leads to the structuring of the organisation (Brown (1971)). The structure is one of work roles. Two important aspects of work roles are functional specialism and authority. Organisations can be given different structural form and shape through variations on these basic variables. The diagrams of Figure 8.9 depict conceptualisation of functional specialism and authority as these relate to 'total work', which was discussed in the foregoing subsection.



(a): Total work

(b): Work splitting, i.e. functional specialism

(c): authority

Figure 8.9: Concepts of functional specialism and authority related to 'total work'

The discussion on how the determination of one job leads to the determination of other jobs will be conducted through 'situation analysis'. As the concept under discussion is important three situations will be analysed. It will be noted that each situation analysed attempts to capture the 'reality of management' progressively more than the one before it. However, as more of the 'reality' is captured the number of side-tracking issues that can emerge becomes progressively larger too. So a caveat is made in advance: each of the situations described should be looked upon from the limited perspective of how the determination of one job leads to the determination of other jobs.

Each of the situations will be analysed from the perspective of a single job, which will be referred to as the 'focal job'. The situation in each case is being described with respect to the job holder, say, in Position C with respect to the diagram (c) of Figure 8.9, and whose function specialism, is marked C in diagram (b) of the same figure.

Situation 1. Suppose the position holder is told that the working times are 9.00-1700 hours. The working hours aspect of work are not informative on the work contents - this is simply an organisational operating procedure. However, the fact that one individual is being asked to work at specified times necessitates that somebody else in the organisation has the responsibility to check that this is being done by the focal person. More often than not, this responsibility lies with the boss.

Situation 2. If an organisation wants the focal person's performance evaluated then the responsibility of conducting this appraisal has to be assigned to somebody. In most appraisal plans this responsibility lies with either the boss, or the boss's boss, and in some instances both these individuals may be involved to some degree. In other words, the assignment of duties to the focal person determines his work and the appraisal of performance determines the work of the boss. Of course, the boss in all likelihood will also be involved in the assignment of work which is the first step in the appraisal process. Thus in determining the job of the focal person the jobs of members of his role-set are also being designated.

Situation 3. Suppose the focal person is the Production Manager in charge of a shop making 10 products over 4 machines. Of course, somebody within the organisation will be responsible for ensuring that the Production Manager receives the needed raw materials in the needed quantity, of the acceptable quality and at the correct time. Suppose the person responsible for the supplies is occupier Position B (as shown in diagram (c) of Figure 8.9).

Now suppose the decision is made to modify the production (affecting product variety, quality, quantity or the rate thereof).

In this situation, prima facie evidence would suggest that in all likelihood the modifications in the job of the Production Manager would be reflected in, or induce, modifications to the job of B, the person responsible for supplies. Moreover, the degree of modification to the Production Manager's job would be the degree to which the supplies organiser's job would be modified.

The supplies organiser's job would be modified in some of the following ways: the storage of incoming materials; negotiation of new discounts on the basis of new demand; contracts with different suppliers, etc.

In addition to the above discussed changes in the job of the supplies manager, B, due to modifications in the Production Manager's job, other members of the Production Manager's role-set are equally likely to be affected. If the individual occupying position I were the Machinery Servicing Manager, changes in production would be likely also to affect his work schedules. Similarly, if the individual occupying position J were the Sales and Distribution Manager, then

modifications to production would be likely to affect his job as well.

The purpose of analysing the above three situations is that the conclusions therein should serve as evidence to the statement: The interconnecting nature of jobs, especially managerial jobs, is such that no single job can be designed in isolation, except in a very trivial way. A corollary of this would be that single jobs cannot be redesigned (except where the modifications involved are not related to work); only a cluster of jobs can be redesigned.

The job modification study, reported in Chapter 7, further supports the above contention. In that study, 81% of the respondents reported modifications to their jobs inducing modifications to other jobs.

The acceptance of the above argument calls for a clarification on the various units involved in the process of job design and redesign. Before discussing the units of job design (or redesign) process, which is done in subsection 8.4.4, another issue having a bearing on the units problem will be discussed. This topic is concerned with the interpretation of the term 'job design'

8.4.3. Designing, redesigning and measuring the quality of the design of jobs

With the assumption that designing is a planned process, the most likely first step taken by the designer would be the delineation of the design features, to be blended, in and for the artefact concerned. Of course, the person commissioning the design may stipulate the features to be emphasised and impose constraints on the features in the form of product cost, etc.

However, the number of new products which come out are few; mostly it is a question of redesign. For example, the new British Leyland car, the Mini-Metro, is said to have been designed anew. At one level, yes, it is a new design; at another level it is a matter of redesign. The case for classifying it as redesign would be that British Leyland has a given amount of experience in designing cars and made an effort to find out the features in existing cars, their own as well as those of their competitors, found desirable by the customers. They might have even gone one step farther and attempted to find the features considered desirable but not found in any currently available car. So the effort was one of improving the features, and introducing new ones - overall a redesign effort.

The case for classifying it as a design effort would simply be that the Mini-Metro did not exist before and its previous non-existence implies it had to be designed.

Individuals join organisations because work exists, or are invited to join in order to create further work for the organisation (in the sense of salesmen and product development people). But the very fact that the organisation exists implies the existence of other jobs as well as the organisational configuration of authority, resources, structure and total work . So, even the assignment of the new arrival to a newly created position, is likely to modify the existing job in some measure. Thus, even for newly created positions one perceives a redesign effort rather than one of design.

The above argument leads the author to the conclusion that efforts at modification to jobs would be more correctly labelled as job redesign rather than job design. The term redesign reflects more precisely the reality of what happens in practice.

The concept of 'the quality of the design of a job' developed by the author as a result of the study reported in Chapter 6, and used to investigate modification to jobs in Chapter 7, presupposes the existence of a job, with an occupant and a role-set. The three measures proposed for measuring the quality of the design facilitate redesign effort.

Having emphasised why the term redesign applies more appropriately to managerial jobs, the author can resume his discussion of the major concern in this section, namely 'units in the job design process'. A lead has already been set on this subject in the foregoing subsection and this discussion will be brought to an end in the following subsection.

8.4.4. The units in the job redesign process

Walker (1950) reporting on one of the earliest job design experiments devoted a subsection to "Displacement of Personnel". A deduction drawn, in brief, from Walker, would be that in job design where redistribution of work is involved the likelihood of people being displaced is ever present; how high the likelihood would depend on the specific situation.

Through the filtering of relevant literature and his own research, the author is led to the belief that conceptualisation of the job design process in terms of three units would serve a useful purpose. These three units will now be discussed, using the diagram of Figure 8.10. This diagram depicts the totality of the work, in an organisation to be split among 20 job holders. Were job redesign to be attempted in this organisation the units of process to which attention should be paid are:

1. The unit of measurement
2. The unit of focus (or the focal unit)
3. The unit of interchange

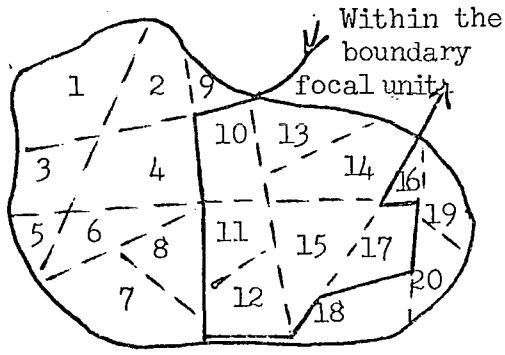


Figure 8.10: Work splitting before job redesign, with superimposed boundary for the 'unit of process'

The first step in the redesign process would be to draw a boundary around a specified work process (which will also isolate a certain number of job holders) or around a certain number of jobs (which will isolate certain work processes). By whichever of these two considerations the boundary is drawn, a splitting of the organisation into two sections will have occurred. The process defined here is conceptualised in the diagram of Figure 8.10 by drawing a line so as to isolate the work done by seven job holders. The concept 'Unit of (job redesign) focus' refers to the work and job holders isolated for the purpose of redesign.

The concept 'Unit of (job redesign) interchange' refers to the jobs (work and job holders) in the rest, or part of the rest, of the organisation from, and to, which either work or people from the unit of process can be transferred.

The necessity of transfer arises when and if the evaluation of the initial design indicates either too much work (the parameters of which were discussed in Section 8.4.1). for the set of individuals comprising the focal unit, or the

other way around. When the work in the focal unit is beyond the capacity of the focal unit individuals the transfer could be accomplished either by shifting work from the focal unit into the interchange unit or through the transfer of individuals from the interchange unit to the focal unit. Were the initial conditions in the focal unit of work underload type, the rectification would need to be accomplished through transfer in a mirror image fashion to that described in the foregoing passage.

Thus the interchange unit acts as a reservoir for either work or people.

Some important aspects emerging from the discussion on the focal and interchange units are:

Note 1: It is not being argued that transfer will always be necessary in redesign. The process of redesign could transform the focal unit depicted in Figure 8.10 into that depicted in Figure 8.11.

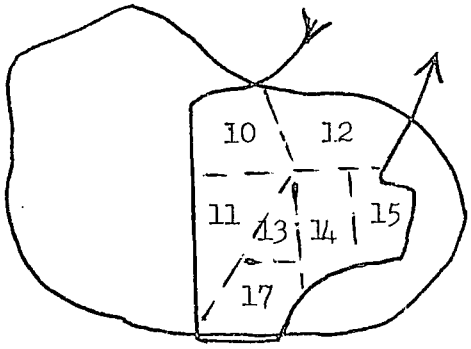


Figure 8.11: Redesign of focal jobs without transfers to or from interchange unit

The situation where no transfers to or from the interchange unit occurs could be visualised as one where the redesign effort only called for the realignment of boundaries.

Note 2: It is not being argued that the focal unit delineation boundary always be drawn around only a subset of the 'total work'; this boundary could indeed be drawn to include all the existing work and thereby all the existing job holders. The resolution of work underload conditions, in such a case, would call for either the creating of work (and the work created would have to be not only within the abilities or wishes of the job holders but also be organisationall desirable) or the shedding of individuals no longer necessary; conditions of work overload would, then, necessitate either the shedding-off of certain work undertaken previously or importation of further abilities to reduce the overloading conditions.

Lemma 1. Adjustment created by shedding or creating work could be undertaken with respect to any Focal Unit; even when the Focal Unit boundary does not coincide with the initial 'total work' boundary.

Lemma 2. The conditions in the Interchange Unit, remain undefined both before and after the job redesign effort. The fact that only certain jobs are within the Focal Unit implies that evaluation of the quality of the design for only these jobs will be undertaken. So even before any changes are made to the Focal Unit jobs, the situation (with regard to the design of jobs) in the Interchange Unit is unknown. If the evaluation of the quality of the design of the jobs within the Focal Unit indicates the desirability of modifications, then the case where no transfer takes place could be regarded as trivial for the current argument; the case where transfer (of either work or people) does occur still leaves unknown the quality of the design of the jobs in the Interchange Unit. This is for the following reasons:

1. The initial status of the quality of the design was not evaluated.
2. It is not known whether the dynamics of organisation transfer was accompanied with shedding or creation of work in the interchange group (or lowering/raising of the personnel numbers).

The concept 'unit of (job redesign) measurement' defines what should be evaluated for determining whether jobs within the Focal Unit require redesign. As has been consistently maintained through the thesis the object on which measurements are performed is the individual/organisation interface. Thus each job holder in the Focal Unit gives rise to an object on which measurements are necessary.

Note that the transfer of people from or to, the Focal Unit can change the number of individual/organisation interfaces in the Focal Unit. Thus, starting with the initial number of, say, 4, job holders in the Focal Unit, as a consequence of adjustments necessary the end number could be either the same as, or different from, the starting number; when different, the final number could either be more or less than the initial number.

Since the purpose of redesign is the improvement in the quality of the design, the number of jobs designed will be designated by the final number of individual/organisation interfaces in the Focal Unit, be the starting number more or less than this number.

Note 3: It is not being argued that transfers from and to the Focal Unit take place only through shifting of work or modifying the numbers of job holders in the Focal Unit. Qualitative ability changes could be introduced as follows: suppose before the redesign the Focal Unit consists of 7 individuals: 5 plant managers and 2 general foremen. It could be the case that analysis of the designs indicate that 4 plant managers and 3 general foremen would be more suitable. The transference of one plant manager from the Focal Unit and one general foreman to the Focal Unit would accomplish the desired change while keeping constant the work load, and the number of individuals within the Focal Unit. In change such as this, based on ability level, while it could be argued that ability level in the Interchange Unit has increased, or decreased (the acceptance of this logic leads to the conclusion that in the example above, the ability level in the Interchange Unit has increased), the effect on the design of jobs in this unit remains undetermined - it can neither be asserted that the quality of the design of jobs in the Interchange Unit will suffer nor can it be proved that this will have improved.

An item fundamental to the conceptualisation of units, as discussed above, is that although the Focal and Interchange Units may coincide, the unit of measurement remains distinct. It is in fact measurements of this unit that distinguish the job design process from others, similar as these might be in their effects, e.g. organisation design.

The job design process as described above could thus be successively applied to eventually cover the whole organisation.

The analysis on the units of the job design process concludes here. In the next section are discussed ways in which the exercise of designing jobs may be conducted.

8.5. Ways of conducting a job redesign exercise

Before discussing the main topic, an issue arising from the topic will be briefly focused upon. One of the queries raised in discussion of job design could be stated as: "How long did (or will) the effects of redesign last?" (see McLean and Sims (1978) and Buchanan (1979)). The issue could be discussed through an analogy with a football or cricket pitch.

The pitch has to be laid and maintained: the initial laying is followed up with mowing, watering, weeding and other forms of repair. The maintenance activities may themselves be a function of the wear and tear the pitch is subjected to. However, after some time, the initial laying may have undergone such degradation as to necessitate, or the availability of improved form of turf may suggest gains through, the relaying of the pitch.

The two aspects of interest for job design in the analogy are the constant endeavour to maintain the quality and every so often, when either the quality degrades to beyond repair or improvements on even the original can be introduced, the re-employment of the original undertaking - laying.

The author recommends that the quality of the design of a job should be given a perspective similar to the perspective on the quality of the pitch. A departure from the analogy, in the case of job design, would be that while the quality of the pitch may be discerned from physical attributes alone, in the case of job design the status of the quality can be discerned largely through constructs.

Drawing from the analogy as well as to reiterate the author's views on job design along with putting the title of the sub-section into context, while the quality of the design of a job has to be constantly evaluated and adjusted, from time to time a redesign exercise may have to be undertaken. Note that redesign consists of two steps: analysis and synthesis. In the analysis step the quality of the design is evaluated; the synthesis step is undertaken only if the existing design is found to be deficient or, conversely, if improvement opportunities become evident. Thus, in the text to follow, the formal

evaluation of the quality of the design is included. In this context, it should be remarked that the constant adjustments discussed earlier in this section imply informal undertakings.

In the text to follow a multi-application, iterative, two step job design process model is discussed. The two steps referred to are the analysis and synthesis parts respectively.

Step 1

Act 1: Delineate the Focal Unit (and thereby the Interchange Unit is defined).

Act 2: Measure the quality of the design of the jobs in the Focal Unit.

Step 2

Redesign the jobs in the Focal Unit, changing where necessary the initial composition of work or membership thereof; these changes being effected through either withdrawals from or deposits into the Interchange Unit. The method of creating or shedding of work could also be used. Note that the creation/shedding of work may itself have implications for the Interchange Unit.

The two steps, undertaken in that order, basically conclude the exercise but for the measurement of the quality of design on the redesigned jobs and the following organisational considerations arising from the use of the two-step model.

Consideration 1 - Multi-use

In medicine it has long been recognised that if a substance is really active it carries the potential of adverse reactions. Often the efficacy is in relation to some specific body system but the adverse reactions arising from the use of it, emerging either because the substance is not tolerated by other systems of the body or because changes precipitated in the treated system are not supportable by other systems, are located in other systems and parts of the body. The level of dosage also plays a role, and is considered accounted for in the exposition. Of course, not all side effects are adverse; beneficial side effects can also emerge. In medical practice, it is considered wise to monitor for side effects because the potential for adverse ones exist.

A conclusion from the above, applicable to job design, would be that on conclusion of a 2-step job design exercise, according to the model described

earlier, the evaluation of the quality of design in the former Interchange Unit should now be attempted.

Note that psychological changes in the interchange group may occur although no physical changes may be made through transfers, while the Focal Unit jobs are being designed. The psychological changes being alluded to are of the type normally discussed in literature under the rubric "Hawthorne Effect" (see O'Shaughnessy (1976)), or "Reverse Hawthorne Effect" (see Emery and Thorsrud (1976)). These two effects may be explained briefly as:

Hawthorne effect - the members of the Focal Unit finding satisfaction from and their performance improving as a consequence of attention being devoted to them.

Reverse Hawthorne effect - the members of the Focal Unit, finding dissatisfaction and/or their performance deteriorating as a consequence of the attention being given to them.

The converse of these two would be the effects on the Interchange Unit as a consequence of attention being devoted to the Focal Unit: the members of the Interchange Unit may, drawing from the Hawthorne Effect, be dissatisfied for the lack of attention; similarly, drawing from the Reverse Hawthorne Effect, the same individuals may, unwarrantedly, be satisfied because attention is being devoted to others. In fact the first of these two converse conditions has been found to obtain and is reported by Locke, Sirota and Wolfson (1976). These researchers report that people whose jobs were not involved in the redesign effort became alienated.

However, the above discussion on psychological effects of focusing attention on specific groups does not constitute an indictment of the job redesign process - rather it suggests that a policy statement should be issued before starting the process on any unit, and that it should be part of the policy to eventually cover the whole organisation, by successive delineations of Focal Units.

The follow-up as proposed above would imply starting at Step 1, Act 1 of

the Model as described earlier. However, since the completion of the two steps is the end for a job design study, the follow-up undertaking would be a second, or further, study. The process of job design as described is one of successive delineation of Focal Units.

The above exposition may prompt the query: "Within the same organisation, must one exercise be concluded before the next one is started". The answer is no; two or more projects may be simultaneously conducted provided, and this is an important caveat, with respect to each ongoing project a clear distinction were made between the Focal Units. The Interchange Unit, serving as a reservoir, may be the same for two or more projects.

Thus to cover the whole organisation , job design model may have to be applied propagatively.

Consideration 2 - Membership of Job Redesign Project

Authority aspects

It has been suggested that transfers of either work or people may be necessary in the synthesis step. Given the authority structure within organisations, it thus follows that individuals who have the requisite authority to authorise these changes would be involved in the job design project. As the degree or amount of transfer necessary would be a function of the specific situation and further since authority distribution with organisations can be different, in specific situations it could be the case that the involvement of the boss's boss is essential.

Organisational satisfaction

For each individual/organisation interface in the Focal Unit views on satisfactoriness of the outputs generated by and demanded from, the job holder need determination. The source of statements on organisational satisfaction has already been defined to be the role-set (including boss, and where applicable boss's boss). Thus these individuals would be involved in the project.

Note that the delineation of the Focal Unit itself will have included the more closely related role-set membership into that group. If in the course of a job design project it is found that certain individuals have less to do with

the Focal Unit members than with those outwith this unit, then a possible implication would be that the initial boundaries were erroneously drawn. Similarly, if some members of the Interchange Unit are found to have more to do with members of the Focal Unit, then this too would indicate the possibility of erroneous initial definition of the Focal Unit. With the understanding that the redrawing of the boundaries this situation may necessitate is not the same as "transfers" as discussed earlier, considerations of project success, especially if multiple use is envisaged, would suggest the redrawing of the boundary to be a prudent undertaking.

Note that if the Focal Unit does not include the boss and the boss's boss, etc., these latter jobs are not being redesigned; the redesign of these latter jobs would be covered under the multiple use consideration. To sum up, although the whole role-set takes part in the project some of these may not be included in the Focal Unit.

Consideration 3 - Iterative Application

In the course of multiple-use, the following situation could arise. After some jobs have been designed, through one or more projects, subsequent projects may necessitate a 'rethink' on what has already been accomplished - i.e. new knowledge may bring to light facts previously unknown or overlooked. Essentially this situation would show that earlier focal boundaries were drawn with too limited a perspective - and that this led to sub-optimisation. Job redesign may therefore have to be iterated with varying boundary delineations.

The proposals above on the conduct of the redesign process would gain support from Monczka and Reif (1973), who themselves suggest that job redesign be undertaken as part of a systems approach with the design of the job as part of the entire organisation system. The contingent job design model defined by the author (and thecontingent methodology discussed in Section 8.6), possesses the characteristics to facilitate optimisation on the dimensions of job characteristics, individual and group characteristics, technology and management, suggested by Monczka and Reif.

This concludes the discussion on ways of conducting job redesign exercises.

It could be said that given the suggestion on multi-use and iterative applications, as well as informal attention to the quality of design, the design of jobs is something that requires constant attention.

In the next section is presented a methodology that the author found to possess some of the attributes and qualities necessary for job design.

8.6. A Methodology for job design

The two types of information required for job redesign, or for the evaluation of the design of a job (which is the first step in a redesign exercise), have been proposed as:

1. The documentation of the job (capturing the job as performed by the job holder).

2. The experience-in-job of both the job holder and the organisation.

Fairly early on in the research it became obvious to the author that job descriptions in the form commonly available may not be usable for the purpose of job design. The discussion on job descriptions is in Chapter 3. Briefly, the reason for rejecting job descriptions, as commonly available, is adequately summed up by Cumming and Schwab (1978):

> "..... it has become increasingly apparent that most jobs are not solely and completely defined by the organisation through the process of job analysis and job descriptions. Incumbents to jobs enact and change the nature of their jobs over time. The manner and subtleties of performing for many jobs provide ample opportunities for individuals to express their performance and skills in actually carrying out the formal requirements of the task".

Cumming and Schwab might well have included the element of constraint that Stewart (1976) found in jobs, instead ofconcentrating on opportunities alone. However, the purpose of the quotation is to support the argument on unsuitability for job design of available job descriptions - and this support is clearly provided.

The author's own research into managerial job design had indicated that managerial job holders themselves operationalise their own jobs to quite an extent (Chapter 6) and find the job descriptions given to them of low utility for learning about their own jobs (Chapter 7).

In Chapter 3 are presented and discussed other methodologies used in arriving at the descriptions of the nature of the managerial job. For arriving at a documentation of the managerial job, these were also considered inappropriate for the purpose of job design as and for reasons stated therein.

As for arriving at the descriptions of experience-in-job the state of

existing theory on job design is as follows:

(i) No consideration - Taylor
(ii) Presupposition - Herzberg
(iii) Problems known - Tavistock
(iv) Domain of problems known - Hackman and Lawler

Note that in the above list Tavistock is included on account of its earlier inclusion in Chapter 5; the application of criteria drawn from the discussion in Section 4 of this chapter would lead to exclusion of this work from discussions on job design - the work done within the Tavistock tradition would be more appropriately classified as organisation design.

The use of questionnaires to elicit information on individual experience in job was rejected for two reasons:

1. Questionnaires can only be designed when the questionnaire designer knows the domain of the problem. Given that in this thesis it has been strongly emphasised that experience-in-job is a unique and situation-specific variable, and that the domain of the situation and individual experiences is practically unlimited, a questionnaire method could not be used.
2. In medical research it is generally accepted that if adverse reactions are collected by the questionnaire method, the reportage is 'blown' compared with the 'free reportage' method.

   In job design, since the purpose of gathering the information on experience-in-job would be known to the people concerned - attempt at rectification if the situation were found to be undesirable, the analogy with medical research would obtain and thus real problems and opportunities for improvement would be conflated with the pseudo.

   Note that once the problem has been defined, the methodology could be used to strengthen the original hypothesis.

The author's reading into literature on applied organisational work and organisation theory, however, gave clues to how the information on experience-in-job could be gathered. Concentration on this type of literature led to the

delineation of a methodology that potentially provided a framework through which not only experience-in-job but also the description of the job could be obtained.

8.6.1. Clues on methods for gathering information on experience-in-job

Earlier on, in Chapter 2, reference is made to the work of Bakke (1950) and Mumford (1972) who developed the concepts of 'bonds' and 'contracts', respectively; to the author it seemed logical that the experience-in-job is some function of what the individual and the organisation were both seeking in the bond or contract that brought them together in the first place.

Lorsch (1979) essentially pursuing the aforementioned line of thinking, but linking it more to jobs, writes:

> "While this contract is not binding in the legal sense, it is of psychological importance. Employees have certain expectations about what they are to get from their work in the company - both economically and psychologically. If these expectations are not met, the employee becomes dissatisfied and ultimately can express themselves by walking out the door".

Of import in the above quotation is the concept of expectations held by the employee. The word expectation is being used by Lorsch to convey the meaning of 'what the individual would like or wants'; it is not to be interpreted in the sense of probability. The probabilistic interpretation of expectation, for somebody who has done something wrong might be punishment; but his expectation, in the sense of 'what he would like to happen' could well be that he receive a second chance.

The concept has been formulated by Lorsch from the perspective of the individual. The converse formulation where the focus would be on the expectations held by the organisation could be made. The original formulation plus the converse formulation would then reflect the wholeness of the job contract and be of direct relevance to the conception of job design being developed in this thesis.

Further on, Lorsch while still building his thesis from the individual perspectives, narrates the case of how an organisation diagnosed friction at theindividual/organisation interface by seeking:

> "..... answers to two simple questions: What did the employees expect from the company? And how well were these expectations being met?"

The difference between what the individual expects and what actually obtains, it follows from Lorsch, determines the friction. Moreover, given that on the topic of fulfilment of expectations, House, Filly and Gujarati (1971) write:

> "Subordinate expectations, to the extent that they are fulfilled, represent degrees of satisfaction with the job and the organisational environment".

It could be surmised that the degrees of variance between 'what should be' and 'what is' would be the degrees to which the individual perceives the lowering in his own efficiency (as discussed in Section 8.1).

Of course, a converse formulation - that from the organisational perspective - could be built in a manner similar to the above formulation for the individual.

The perception of low individual efficiency, depending on the individual's sensitivity, would cause internal conflict and the resulting reaction would have the propensity to cause conflict between the individual and whatever was on the other side of the interfacing surface - in job design it is the organisation. This contention would find support from Dyer (1972), who giving his perspective on team building writes:

> "A more useful way to understand conflict is to view it as the result of a violation of expectations. Whenever the behaviour of one person violates the expectations of another, it can be predicted that negative reaction will result".

To conclude, it could thus be surmised that, in essence, job redesign would require finding out the violation of expectations of both the individual and the organisation, so as to attempt to negotiate the reduction or removal of the violation.

Expectations as a product of Weltanschauung

An individual's expectation conveys the image he holds of himself and the others involved in the statement of the expectation. For example, the person saying that he expects his subordinates to be loyal is suggesting, besides the obvious behavioural expectations of the subordinates, that he, for

whatever reasons, values or prefers loyalty.

From the above, statements of what one individual expects from the others could therefore be interpreted as arising from the relationship between them as well as the individual's past learning - they are normative assertions. The past learning refers not only to general learning but also specific learning - specific to either the generic class or even at the level of the person or thing.

Thus, normative statements may reflect how the subject sees the future (or even the past) without him (the subject) endeavouring to make a comparison of any kind. But without the subject indicating some modicum of comparison no deductions can be made regarding the experience drawn.

Statements on violation of expectations

Pollard (1949) writes:

> "To know exactly how you stand as an employee and, in addition, to have your boss aware of your expectations and ambitions is one of the most important and difficult management problems. Important, because good placement depends on it and poor placement means inefficiency and low morale. Difficult because we all have had too little training and practice in the kind of analysis and expression required to appraise and describe our subordinates or ourselves. Difficult also because of the high degree of self honesty, courage, tact and freedom from prejudice needed".

The author interprets the above text to imply that statements of expectations can themselves reflect, and be regarded, as violations thereof. Look at it this way: if a subordinate went to his boss and simply stated that he expected to be paid £2,000/month in the future, under the assumption that one of the following three situations obtains:

- in the past he was paid less
- in the past he received more
- in the past he had received the same amount

) violation of expectation of either the boss or the job holder

it now depends on whether or not the boss had dwelt on the subject of the subordinate's salary at all, and, if so, what opinion he holds as to the correctness or incorrectness of the salary; moreover, if views on incorrectness were held whether he thought of the salary as being too high or too low.

Thus the likelihood of the statement being interpreted by the boss as indicating subordinate dissatisfaction with the current salary levels is ever present.

It is in the context of the ever present possibility of two way interpretation that Pollard's quotation with its emphasis on "honesty, courage, tact and freedom from prejudice", can be given interpretation.

Note that the judgemental element may be contained in the statement of the expectation and thus be provided by theperson making the statement or left out so as to be injected by the person who is the object of the expectation. In the example given, the original statement of expectation made by the subordinate did not contain the judgemental element; it was left for the boss to interpret the statement by injecting the judgemental element.

Thus statements of expectations which can be given judgemental interpretation by the two parties to the conversation may or may not lend judgemental connotations to a third party.

In conclusion, then, the above discussed type of literature indicated to the author some ways of capturing the experience-in-job. Next will be discussed a methodology which appeared to the author to have the potential for development as a job design methodology.

8.6.2. The methodology of the Expectations Approach

The methodology about to be discussed was developed for communication auditing. Machin (1975) published his seminal paper on the approach which was later used by G. Wilson (1978A) for generating job descriptions. The first research by Wilson was found to be of such merit that the Royal Navy commissioned him to help produce a set of job descriptions for a detachment of units on regular fisheries protection assignment.

The main thrust of Machin's research, and what led to the development of the methodology, has been in ways of improving organisational communication and thence organisational effectivensss (Machin (1977)). However, examination of the Expectations Approach (EA) methodology revealed that not only the organisational effectiveness and efficiency but also individual effectiveness and efficiency would come to light through its application. However, since this aspect of the methodology has to do with fulfilment of criteria on characteristics, it will be discussed a little later, in Section 8.6.3, after a brief

discussion on the modus operandi or technique of the EA methodology. This discussion may also reveal some of the implied characteristics, a fact which itself helps towards shortening the discussion on characteristics possessed.

Modus operandi

In the EA methodology each job holder defines two distinct role-sets: input role-set andoutput role-set, i.e. composites of individuals supplying the job holder with his inputs and receiving outputs generated by him. Of course, in reality, these two role-sets will overlap; moreover, the overlap would be complete if the trivial case of request and response were included. However, note that the methodology does make the conceptual distinction between the input and output role-sets, and this for job design purposes, the author regards as important.

Having defined his two role-sets, the job holder then states what he 'actually' expects from those who supply him with inputs; with regard to the output role-set, the job holder states what he 'perceives' others to expect from him. The basis of the methodological distinction between 'actual' and 'perceived' is linked to the concepts of effectiveness: an individual generates outputs (type, quality, quantity, timing) according to what he perceives the demands on him to be; with respect to his inputs, on the other hand, he could actually be more specific. In other words, once the job holder determines what is needed from him (correctly or incorrectly), taking his own and others circumstances into consideration, he could articulate his needs as actual. Earlier discussions (passim Chapters 2-7) on role ambiguity, role uncertainty, conflicting demands, etc. would indicate that since the likelihood of the job holder perceiving thesituation extant incorrectly is ever present, the use of the terms 'actual' and 'perceived' as labels for the inputs and outputs are generally appropriate but specific to job design, they are desirable and useful.

The above delineation of the role-sets and specification of theinputs and outputs is the modus operandi of the EA methodology. Of course, there are some technical details connected with application which are not being mentioned here.

From job description to job design

One inference from the discussion in sub-section 8.6.1. would be that expectations can be given two attributions: face value and interpretation. Interpretation requires knowledge of the circumstances - the past happenings. Face value requires no interpretation - the statement designates some desired future outcome.

For example, consider the following statement, from everyday language:

"It should be 0^{o}C. tomorrow "

The face value attribution would seek neither the reference to today's temperature nor attempt to find out the circumstances which led to the statement. This is a descriptive attribution.

The interpretative attribution, on the other hand, would be based on either comparative analysis - is the temperature today different from zero degrees - or the knowledge of circumstance, which prompted the statement. The degree of precision with which the circumstances become known although important and relevant for interpretation hardly matter in the current argument.

Going through the data and report on job descriptions prepared by G. Wilson, referenced earlier, and some other raw data collected by Machin in the course of his organisational communication audits (incidentally, the same raw data was used by Machin and Lyn Wilson for their later publication in 1979), the author found that the data pertained not only to descriptive attribution class but also to the interpretative attribution class. In a way this itself was not a surprise - in subsection 8.6.1. has already been discussed how experience-in-job is the basis of expectations, while G. Wilson had already successfully used the EA methodology for job descriptions. This real data, however, provides the opportunity for presenting an example, from statements written by managers, to show how the descriptive and interpretative attributions can be differentiated.

Example: The following three statements were written by managerial level personnel as the 'Actual' expectations they held of their bosses. All three statements come from different communication audit studies, and have no relationship with one another, save for the commonality of topic.

1. "To recruit staff quickly, we are still undermanned".
2. "To take action and help resolveproblems due to chronic staff shortages".
3. "Ensure adequate plant-manning personnel".

It is the author's view that the third of the above statements is essentially a descriptive attribution. It clearly defines the boss's job, at least to the extent that the subordinate regards the acquisition of personnel as a responsibility within the province of the boss. For job design purposes, the statement provides the subject on which further investigation may, or may not, reveal staff shortages (or for that matter over-manning).

The first two statements are interpretative. Here the job holders have clearly stated the situation - inadequate availability of human resource- of direct concern to job design. Note that in the interpretative attribution, the descriptive attribution is implied: both these statements imply that the subordinate holds the boss responsible for providing them with staff. Interpretative attribution thus reflects the experience-in-job of the job holder while the same could not be said for the descriptive statements.

From the foregoing example it could be concluded that whereas G. Wilson used the EA methodology only for deriving job descriptions, the methodology could be equally facilitative in applied job design. Before departing from the subject at hand, it would be relevant to give a brief statement on G. Wilson's application of the EA methodology to job descriptions. The approach was effectively applied as follows:

> To derive the job descriptions for a captain of a vessel, all the relevant officers, on ship and on the shore, wrote statements on what they expected the captain 'actually' to do. The captain also wrote statements of what he 'perceived' was expected of him by the aforementioned members of the role sets. This was done with respect to three ships.
>
> The inappropriate (as defined by the Navy) expectations were thrown out and the others, matched for verbalisation, aggregated/consolidated into a list. The list thus produced constituted the job description of each of the 3 captains (and perhaps others who might later be appointed captain and even perhaps for the captains of ships operating from other bases, but on similar assignments).

For job design purposes, following from the above discussion, there was a clear indication that the EA methodology had the potential whereby the two kinds of information required, the description of the job and the experience-in-job, could be simultaneously collected. The collection, and simultaneous collection were two attributes delineated in Section 8.2. In the next sub-section is the author's evaluation of the EA methodology for other characteristics, delineated at the beginning of this chapter, as necessary, additional and desirable for a job design methodology to possess.

8.6.3. Evaluation of the EA methodology for characteristics

The evaluation of the methodology is based on appraisal of raw data, made available to the author by the inventor of the Communication Audit Methodology, and maintained by him in archives at Durham University Business School. Briefs, based on this data, in the form of Working Papers are also available from DUBS (see Brookes, McCormack and Seabury (1979)).

Data revealed that the EA methodology had the potential to permit input-output analysis of the form depicted in Figure 8.3.

However, note a point of departure between Machin's theoretical formulation of the input-output concept and that depicted in Figure 8.3, explained in terms of data examined.

Machin has consistently equated the 'actual' expectations held by an individual to the individual's inputs (see Machin (1977), Machin (1973)). However data revealed that the following three statements written by managers to be the 'actual' expectations they held of their bosses.

1. "Consult me in matters that affect operating policies".
2. "Effect change in divisional policies which adversely affect us".
3. "Recruit staff quickly, we are still undermanned".

Of the above three statements the third could be interpreted as a request for input. The first of these statements would be interpreted as an 'output' from the job holder. To the author, with reference to Figure 8.3 (looking at it from the OUTCOME point of view), the likely outcome, if the suggestion contained in the statement were accepted by the object manager, would be the legitimisation of an output from the person who wrote the statement.

With regard to the second of the above statements, inference regarding whether, for the person who wrote the statement, it is an input or an output, is even more difficult. The more obvious thing is that the job of the boss is being defined, for whatsoever reasons. For job design purpose all the three statements would be of high value. Given the above statements, the analyst could ask the person who formulated:

(a) the first statement:- Were you not consulted in the past?
Was the advice you gave not accepted, did this result in ill effects on your job as a consequence (or on the organisation for that matter)? etc.

(b) the second statement:- Are there divisional policies which adversely affect you?
For how long have such policies existed, or been adversely affecting you?

Thus, while input-output analysis of the type suggested in Figure 8.3. may require consolidation and interpretation, with some elements even disregarded, the use of EA methodology would nevertheless permit and facilitate this. That the methodology should lend itself to input-output analysis has been delineated as the primary criteria in Section 8.1.

The EA methodology could be regarded as a dredge which makes available all sorts of data which the participants in the EA application choose to write, to the researcher. At the level of descriptive attribution this data would thus permit the development of appropriate classification schemas (see characteristic in subsection 8.2.1).

The EA methodology documents the job through its descriptive attribution and provides information on the interpretative attribution which relates to the experience-in-job. Note that the experience-in-job of both the job holder and their role-set becomes available. However, note also the possibility that the individuals participating in an EA exercise may choose to verbalise their statements with only the descriptive attributions. For those statements, it would be necessary for job design purposes, to find out the experience-in-job.

Note: Job modification can take place without the use of experience-in-job but the basis of job redesign is the job holder's and role-set's experience-in-job.

The methodology itself could nevertheless be regarded as providing for simultaneous documentation of the description of the job and the description of the job holder's experience-in-job (see characteristic in sub-section 8.2.2.).

The EA methodology, being essentially under the control of the job holder and his role-set, the level of abstraction, or the level of detail, available in statements varies greatly. While one individual may write, say, 50 statements to describe his expectations, another may encapsulate the substantive content of these 50 in only 10 statements. However, the number of statements is not material either for job design or job description; the important thing for both of these is their completeness - which itself could only be defined with reference to the two parties involved in the statement of an expectation, i.e. if the two parties, writing whatever number of statements each, are satisfied with first of all the description of their role-set interactions and, secondly, with the experience they derive therefrom then this is all that is necessary.

Returning to the data examined, global statements, as well as statements denoting elements of process and procedures were found. For job design purposes then, if the tracing of contributions of various individuals becomes necessary, it could be done - the methodology facilitates it. On the other hand, given that the methodology also permits any level of abstraction in the articulation of statements, for this type of analysis to be performed, specific instruction for the participants in the EA application on an a priori basis may be necessary. Further, if the attention becomes aroused on specific procedures as a consequence of initial data gathering, a subsidiary run with a special instruction may become advisable (see characteristic 8.2.3.).

The methodology in its current form would permit the evaluation of as many jobs as the job designer (whoever that might be) wishes to include (see characteristic 8.2.4.).

The methodology being communication-orientated could be operationalised such that negotiations on job elements take place, and experience-in-job derived by the various individuals shared. Note that, as stated earlier in Section 8.5, as some forms of trading may require organisational sanction, people with

requisite authority may have to be involved in the negotiation process. In its various applications of EA even now, when no job design were intended, dyadic and group negotiations have invariably taken place (see characteristic 8.2.5.).

The EA methodology is completely independent of any structural form, and does not rely on any organisational structure to support its application. It could then be used for job design in organisations of any given structure with equal facility (see characteristic 8.2.6.).

The EA methodology itself supports no theory, whether of job design or any other; it itself is founded on 11 principles (see Machin (1975)), which link it to system theory and contingency theory. Any problems/opportunities located by the use of this methodology for job design would thus be contingently determined and have relevance only in the domain of their discovery. For job design purpose the portability of the EA methodology is then total (see characteristic 8.2.7.).

The fundamental assertion of the methodology at the theoretical level and more likely result of its application are, respectively, that jobs can be described and modified, with less likelihood of friction, through the interaction of a job holder with his role-set. However, outside intervention in the form of a stipulation as to how the jobs should be designed is nevertheless possible. As a matter of fact this was foreseen even in the earlier mentioned criteria where authority intervention was discussed.

With regard to outsider participation, however, consider the kind of expectations the Focal Unit might hold with respect to him and what are the likely expectations he might have of the Focal Unit. Could the outsider be a pure observer? Suppose the Focal Unit accepts the outsider as an observer, the expectations of the Focal Unit could now be regarded as nil; but what does the observer expect to gain from this form of participation?

In order to come to some deductive answer consider the following expectation, which incidentally has been used before:

"Ensure adequate plant-manning personnel"

which is formulated with a descriptive attribution. To know whether job redesign is occurring the observer should find out whether or not an under-

manning (or over manning) situation exists. On the other hand the object and the subject managers will already be aware of all the background information. In the negotiations that ensue, it would be incorrect to assume that under-manning or over-manning would be discussed in such a way that permitted the observer to acquire this knowledge.

Thus in the use of the EA methodology, whereas in the case of deriving job descriptions, observer status in the negotiations process may be adequate, pure observer status in a job design exercise is likely to leave the observer unable to describe the full redesign introduced.

Going back to the main theme under discussion, for EA methodology, role-set participation is mandatory, but external participation is possible (see characteristic 8.2.9.).

Since the EA methodology permits the members of the Focal Unit to write any actual or perceived statements they wish, any follow-up of the initial process with a cycle of affirmative negotiations, will certainly facilitate the exploration of job boundaries (see characteristic 8.2.9.).

The data collected in the course of an EA application would permit other analysis. In fact, performance appraisal from the EA database has been under-taken (Johansen (1978), Reed (1980)). Role-set participation in appraising performance would be conducted in the same way as obtaining information on organisational experience-in-job.

Focusing on individual or on team jobs, it appears is also possible.

Further recommendations

Role analysis. Modern researchers into the content of the managerial jobs have tended to use the method of role analysis (see Chapter 3). While Machin and his team have in their work consistently argued for and suggested roles classification (e.g. Machin (1979), Matthews (1976)), the independently under-taken field work by Miller (1979) in South Africa with the EA methodology extends the earlier work and provides an empirical proof of the usefulness of the methodology in the context of analysing jobs rather than work, which the author discerns to have been the primary focus in the research of Machin and his collaborators. To Miller (who gives acknowledgement to Schuler and Brief

for the concept), a role:

> "serves as a boundary between the individual and the organisation. Roles represent expectation of individuals and the organisation. Roles then serve to tie the individual to the organisation and the organisation to the individual".

Analysis of jobs conducted on the basis of roles in accordance with the above quoted understanding would, on prima facie evidence, be useful for synthesis purposes.

Validity of statements of expectations

From the description of modus operandi (Section 8.6.2) eachmember of the Focal Unit nominates his own role-set andthen states the input/output expectation he holds against each of them (the members of the role-set). Further, it has been suggested that the initial statements of expectations be followed through by an affirmative cycle, in the application of the EA methodology to job design.

The question that could be raised is whether the statements thus made would in fact reflect the situation extant.

On the authority of Moreno (1953), the originator of socio-metric techniques, it would be argued that provided the Focal Unit knew of their participation in an exercise to evaluate the quality of the design of their jobs, with the implication of redesign if problems could be delineated/areas of improvements found, then the results produced through job holder self nomination of the role-set would:

> "produce valid results, as the subject managers believe that their situations will be restructured (validated, formalised) through the process in the light of their choice."

The complete job holder control, i.e. choice in nomination of role-set, plus choice in use of words, is therefore likely to lead to statements which are based on experience-in-job.

Further, looking at job design from a 'pure research' perspective, a deduction from Scott (1965) would be that data, and therefore the results, obtained by making job holders focus on the job and the role set are likely to be more realistic and correct compared to the situation where the job holders

focus on the job and the researcher. The distinction between the job holder focus on role-set as opposed to the focus on researcher, as well as the superiority of the former method of data collection against the latter comes out clearly from the following quotes from Scott (1965):

1. "Since the study of jobs implies the study of interlinked behaviour (activities), it is better to organise the study in terms of the expectations held by the various people".

2. "The constraints exerted upon the individual by the expectations of other members of the organisation and his relations with them appear generally to be too great to let him permit the presence of the outsider (researcher) to alter his conduct very much".

Thus, on the authority of Moreno and Scott, it could be concluded that the use of EA methodology to job design is more likely to provide more accurate data than methodologies which are not job holder propelled and role-set focusing.

Structure from interactions

It has been stated that the EA approach disregards structure and thus fulfils the criteria on utility in organisation of any structural form. Additional advantage of the form ignoring methodologies would be that these could in fact be used to derive appropriate structures. Dale (1957), writing on how Du Pont, one of the early implementors of systematic management, derived structures from group ability basis rather than devising structures and then slotting individuals into them, Dale writes:

> "Interestingly he separated the question of 'form or relationships' from 'the selection of individuals for the performance of duties' and urged that the selection of the personnel of the two top committees should precede the final determination of the form of organisation".

For job design implementations, then, the delineation of the Focal Unit, the concentration on the work, as has been suggested here, and enacting transfers to achieve a balance at every individual/organisation interface therein, would be tantamount to deriving a structure to fit both the work and the individuals.

8.7. Job Audit: An EA methodology based technique for job redesign

EA is a general methodology (communication based) which could be used for a variety ofpurposes. While its generality renders it useful for different ends, the end purpose determines the logic in the process of its use.

For EA methodology to be operationally used for job design purposes, the author devised a three step execution model which will now be presented. The description assumes that the Focal Unit, and by implication the Interchange Unit, has been defined.

Step 1: The exploration step

Each member of the Focal Unit first defines his role-sets, and then writes statements of the 'actual' and 'perceived' expectations held by him with respect to each member of these role-sets.

The following two types of statements would arise from the foregoing:

1. Descriptive - a description of what happened in the past.
2. Interpretation - (i) a description of what happened in the past but the job holder would like not to see take place in the future.
   (ii) a description of what did not happen in the past but the job holder would like to see take place in the future.

Within the above framework the association of 'actual' to inputs and 'perceived' to outputs would be disregarded. In fact, it is being suggested that statements of expectations, as written by job holders, whether under the 'actual' rubric or under the 'perceived' one, (are either description or interpretation) cover both inputs and outputs, and are indicators of job holders' views of the future through his experience of the past. Thus the statements would be interpreted as attempts by the job holder to explore the boundaries of his job and come to an agreement on the shape of his job for the future.

Once the above discussed statements are available in a form the presentation of which is satisfactory to the individual making these statements, they would be passed over to the 'object' person, i.e. the statements written by person A

on his actual and perceived expectations with respect to person B, would be passed on to person B, while A in turn receives the statements similarly written by others.

Note this 'swapping' takes place with respect to all expectations statements generated in the exercise.

Step 2: The conciliation step

Dyadic pairs meet for the resolution of unclear or contentious statements, the delineation of areas of common concern and the location of problems as well as thinking through of strategies for resolution of problems and methods of improvements on current operations. This type of dyadic negotiation finds support from Weiner (1971). The step would also result in implementation of any changes that the dyadic pair could, either on their own or through mutual contrivance, arrange.

Step 3: Resolution step

In this step those responsible for the design of the Focal Unit jobs would take actions which require authority. The implication is that these individuals have access to all the information generated in Step 1 and are knowledgeable of the relevant events of Step 2.

Adjustments to the Focal Unit jobs through the enactment of transfers (of work or people, into or from the Focal Unit) could now be undertaken.

The term 'Job Audit' has been operationally defined above. The concept, thus designed, is new but the term has been used in literature before. Foulkes and Morgan (1977) report a study, conducted by the Personnel Department of a large firm, in which the term 'Job Audit' was used. However, from the Foulkes and Morgan reported study, it could be surmised that the purpose of that study was "check what employees actually do on their jobs against the job descriptions"; on the other hand, the purpose of job audit, as defined by the author could be stated to be "Evaluate the situation extant regarding individual/organisation interface fit".

The Foulkes and Morgan study does not make it clear whether the departures from descriptions led to variance between needed and actual performance; nor

does the report make clear whether the discovery of departures or variances prompted any action to be directed at modification of the description or of the behaviour. Nevertheless the orientation of the study, and the surmised purpose deductively suggest that it was a "difference and variance reduction activity undertaken to 'freeze' the situation".

The definition and set purpose of job audit, as suggested by the author, would involve:

> Finding out what individuals are doing; what they should be doing; what they think should be done; what they think should not be done; why they are doing it; why they are not doing it; what should be done for them - by their role set and those responsible for the design of their jobs .

Thus, whereas the job audit reported by Foulkes and Morgan could be regarded as an attempt at aligning the performance to the description, the author's conceptualisation implies taking the 'job-extant', through the experience-in-job of job holders, to how it could be done.

Going back to the three step job audit, while the first step could be regarded as one of preparing the case and the following two steps as negotiation steps (see Dempsey (1974) for the fundamentals of negotiation process); the descriptive verbalisation may necessitate eliciting of related experience-in-job even in steps 2 and 3.

8.8. In conclusion and thence

In this chapter, from theoretical considerations the author derived the characteristics which a job design methodology would be required to possess on primary, additional and preference bases. Next, a discussion leading tothe author's perspective on units of the job redesign process was conducted. The two aforementioned discussions together underpin the discussion containing the author's view on how a job redesign exercise could be conducted.

The last major discussion in this chapter looked at ways, or techniques, for capturing the job holder experience-in-job in a job redesign exercise. The search focused the author's attention to a specific methodology, of recent origin, the evaluation of which led the author to believe that notwithstanding the practical difficulties (and these have been appropriately described) it is perhaps the only methodology which can lend itself to managerial job design, especially on account of the often 'soft', difficult to measure, and multi-dimensional nature of the inputs, outputs and throughputs of the managerial job.

The convergence on this methodology led to the development of concepts of how it could be applied and used for practical job design applications. For this the concept of job audit was developed.

The methodology showed promise, but needed testing. In the next chapter is described a small study conducted to see if the 'in vitro' promise would be realised 'in vivo'. However, the fact that the chosen methodology was developed in a context although related to job design but different from it, requires some additional explanation in order to put the reported study into proper evaluative perspective.

Machin and his team have, till now, not used the interpretative attribution of the statements of expectations; but the use thereof is not only required but mandatory for job design. Further, not only the specific situation of immediate concern in the execution of work have to be given interpretative attribution, but the understanding of the prevailing situation, contextual to the work, within the organisation as well as that outwith the organisation but impinging

on the work and people therein would be required for job redesign purposes; the latter would facilitate the former. For justification of the above statement, consider the construct 'job security', which is often regarded as an important individual experience-in-job (passim Chapters 2, 3, 4 and 5).

A decline in the economic activity in the organisation's trading area, especially accompanied by either lack of prognosis or where forecasts indicate further adversity, is likely to result in organisational coping behaviour (see Chapter 4). One method of coping with reduction in trade, is reduction in manpower. Under such conditions the prevalency of concern on job security could be expected.

A conclusion from the above would be that for the person or persons (whoever this or these might be) designing jobs should attempt to bear in mind the obvious and not depend upon explicit statements of expectations to provide him (them) with situation-specific characteristics of concern; equally, it would behove the researcher participating as an observer to be aware of the general situation so that he is able to interpret events he witnesses, in the process of redesign. Note that the above statements only suggest a level of awareness; there is no implication for either the job designers to initiate unilateral action, or for the researcher to shade all interpretations, on the basis of foreknowledge. The importance of foreknowledge lies in that both the job designer(s) and the researcher could then raise questions to ascertain the extent to which the foreground events affect the jobs - especially in the absence of interpretative attribution in the statements of expectations.

The above note of caution and advice would also be supportable from considerations such as the likelihood of individuals having job underload conditions not verbalising their expectations in such a way as to include this experience-in-job within the statements.

Thus for reasons based on arguments given above, the study reported in the next chapter starts with a general description of the organisation and the organisational events preceding the study; moreover, at each point where the author found/received further information, the author's interpretation, based on job design consideration, are stated.

Post Script

Under this heading are presented some research findings, more recently reported in literature, bearing on the material presented in Chapter 8.

Shaw's (1980) publication under the title of "Information-processing approach to the study of job design", contains the following suggestion:-

> "We should attempt to discover what informational components of the task are being focused on by the worker in a specific situation and what part of this information is considered relevant to a judgement of the task".

The appropriate interpretation of the above quotation is with respect to diagnosing job design problems and delineation of areas of improvement. More specificially, rather than presenting the job holder with a set of questions based on what the researcher, on an a priori basis, believes to be the salient dimension of his (the job holder) job, the dimensions, and the saliency of these, should be defined from data provided by job holder.

It has been suggested that organisational experience-in-job would be elicited from members of the role set. In practice, the acceptance of this method of data collection is tantamount to role-set performance appraisal. One of the acceptance enhancing characteristics for the methodology was defined to be 'Support for, or as a method of, appraising performance'. The form performance appraisal process commonly takes could be depicted as 'something done by the boss to his subordinate', (see Johansen (1978)).

More recent research findings, e.g. those of Gabarro and Kotter (1980), indicate the disadvantages of such a one-sided, one-man undertaking. Gabarro and Kotter discuss many, but the one disadvantage of present concern is a bias which, ironic as it may sound, leads to the downgrading of the appraisal for those whose performance may actually be good. Reasoning how the bosses may, inadvertently, introduce this bias, Gabarro and Kotter write:

> "Ignoring individual achievement, they may even evaluate more favourably subordinates who do not bring problems to them".

Thus, in situations where discussions with the boss may lead to the resolving of problems, subordinates who bring the problem to the notice of the boss may end up being penalised for their effort, while those who, by not discussing the said problem, attempt no resolution thereof, end up being rewarded.

The EA-methodology could be used by appraising performance in such a way that the whole role-set participates in the appraisal. This facility is a natural property of the methodology. The use of this would give those whose problems get ignored the same chance as available to those whose problems do get resolved, to give their views on the actual status of the focal person's organisational effectiveness and efficiency.

The above argument suggests the superiority of the methodology, in general, for the conduct of appraisals. Nonetheless, in specific cases, it cannot be said with certainty whether this property would stand as a recommendation for the use of this methodology.

In Section 8.3.3. of this chapter is discussed the possibility of continuously recording changes in jobs so that the job holder himself (or possibly his role-set) could start the corrective or legitimisation processes. Earlier, in Chapter 7, was discussed the concept of small changes, each on its own more or less inconsequential, however cumulatively affecting the job in such a way that some form of modification to the job may be necessary. For particular jobs, as to when and how often this legitimisation or re-design might be necessary was in both these instances suggested to be a function of the job holders involved. A recent publication by Handy (1980) provides support for this suggestion. According to Handy perceptions of change are such that:

> "Some will say, 'What's so discontinuous about a silicon chip - isn't it merely an extension of the abacus'".

The acceptance of the above characterisation of perception on change leads to the conclusion that the job redesign methodology should provide some mechanism whereby not only could the small changes be continuously recorded, but also attempts at legitimisation and redesign could be initiated by the job holder himself.

Chapter 9

CHAPTER 9

ACTION RESEARCH: TESTING THE JOB DESIGN METHODOLOGY (AND GATHERING EVIDENCE FOR THE CONTINGENT JOB DESIGN THEORY)

Introduction

This chapter describes a study the initial impetus for which was provided by the author's wish to test the methodology, discussed and described in the foregoing chapter, in its application to job design. One of the main concerns for the author, as discussed in the foregoing chapter, was the drawing of experience-in-job from the job descriptive statements written by job holders. A subsidiary purpose of the study was that it should help the author to 'firm up' and build on the 'portable' theory of job design that the author, as a consequence of literature reading and studies conducted till now, was increasingly, conceptually, converging upon.

It was the author's decision that the above stated purposes would be facilitated by using the job-audit methodology (see previous chapter) in an environment where he could observe and discuss the on-going managerial process , i.e. see managerial job holders going about doing their work and discuss with them the nature of their job as well as the experience-in-job that they (the job holders) drew from when undertaking the roles/duties/tasks assigned to them, as well as the job-related consequences of this undertaking.

Further, if the above described environment could be found, the author's earlier stated purpose (in Chapter 3) of looking at ways of classifying jobs would also be facilitated.

The author was fortunate in establishing contact with a senior manager from a large chemical company, who was then involved in planning changes within his group. Through this source, contact was established with six senior managerial persons, who participated in the study being reported.

The group agreed to give the author the freedom he desired, i.e. to observe them in the conduct of their work, and to discuss with him the purpose of their

activities as well as to comment upon and narrate (the managers to the author) their experience-in-job. The arrangement reached involved the author receiving the above benefits in exchange for the use of the methodology.

As offered to the company, the methodology consisted of the use of the forms designed and prepared by Machin (1977) and his team as well as the use of the university computer together with the suite of programmes for preparing reports from the data gathered.

(Note: Readers interested in the general background to this research study e.g.: a brief summary of the research environment; the organisation; the task environment; and the general situation in the industry in which the study was conducted; are referred in the first instance to Appendix 9.1).

This chapter has the following sections:

9.1 The objectives of the study

9.2 Methodology and procedure

9.3 Data

9.4 Facilitating the job audit

9.5 Classifying the managerial job

9.6 The dynamics of "within RMG" changes

9.7 Conclusions of the field study

9.1. The objectives of the study

The initial contact having been established with the host organisation, the purpose of the study was defined. The study started with two well defined sets of objectives: one for the author and the other for the organisation.

As in the narrative interactions with the various participants to the study will be described, the author finds it desirable to explain how references to them will be made. The six participants to the study and the codes for referencing them are:

- Assistant Works Manager, coded A_R.
- Section Manager, coded EAT
- Four Plant Managers, with assignments as follows:

Hot End Plant Manager, RAP Cold End Plant Manager, EMO Development Manager, JEL Superintendent, RGB	collectively RMG

Note that, although there were 6 participants involved, the focus of the study was on the jobs of the Plant Managers. These four Plant Manager level jobs will be collectively referred to as the Researched Managerial Group (RMG). The author's initial contact was with the Section Manager, coded EAT above. The participating Assistant Works Manager was the hierarchical superordinate of EAT.

The objectives of the study, to be presented shortly, were set up through discussion with EAT. The twin objectives for the study are laid out in the following two subsections:

9.1.1. The organisational purpose for the study

During discussions with EAT, the following organisational purposes for the study were defined:

A. A role for the new position of team leader

The position and role of team leader was an innovation - in the process of being created. The organisation, as explained in greater detail in Appendix 9.1, attracts and is able to recruit, high calibre people but the industrial sector position is such that manpower levels are being run down, so chances of promotion are not what they used to be. The creation of the Team Leader position therefore gives management a chance to show appreciation for outstanding perform-

ance, while management may be unable, for the time being, to promote the deserving individual.

Another aspect of the creation of the team leader position is related to the technological complexity of the production plant. This technological complexity calls for a great deal of co-ordinating effort. The responsibility for co-ordination should be assigned specifically to somebody, otherwise the requisite level may not be achieved. Besides being known to practising managers this is well documented in literature. For example, Dyer (1972) writes:

> "A crisis occurs because everyone throught someone else was responsible for handling a situation that was never covered".

Thus the necessity for assigning responsibility for the overall co-ordination of the plant operation by the to-be-appointed team leader was considered a desirable objective. The section manager could, presumably, have taken on this role himself, but he felt this would be self-defeating as the outcome of such undertaking would be the pulling upwards of authority to the level of the Section from that of the plant. Co-ordination at the section level would be further dysfunctional because the section manager has many other plants within his responsibility area and were he to take on these additional duties this would tend to overload him.

The above two considerations, in the main, led senior management to look at ways of creating a team leader position. The idea for the creation of the team leader's position, at the level of the plant, with the proviso that hierarchically the team leader would be 'first among equals', had come from the works manager.

Thus, one of the purposes of the study, for the host organisation, was concerned with the meaningful definition of the team leader's role. The hope was that if it could be done meaningfully on one plant, a similar strategy could be followed through on other plants, if similar conditions prevailed.

B. Uniform and comprehensive coverage

Another purpose was to define each job thoroughly so that everybody would be in a position to take on the job of another member of the team at short notice.

Holidays were normally arranged so that at least three of the team were present; but sick leave and emergencies had to be taken into consideration. Some tasks cannot wait for the return of the person who is normally responsible for them. The complexity of the tasks demands a considerable amount of knowledge and competence on the part of whosoever undertakes tasks even if on a temporary basis, and the exigencies of the situation necessitate immediate action. The study remit therefore included delineation of the important aspects of each job (in terms of tasks) for which primary, secondary and if necessary tertiary, responsibility would be assigned. This, of course, would necessitate individuals with no previous close contacts with elements of tasks now having to learn these aspects. A uniform and more complete coverage would thus be provided for the plant as a whole.

C. A role for the superintendent

The superintendent's role had not been defined to his satisfaction, although he had been with the plant for some years. It was thought that this would be an opportune moment to attempt a definition of his role to the satisfaction of both the current job holder and his role-set.

The above stated three were the main organisational objectives of the study. In the next sub-section are laid down the author's objectives for undertaking the study. These are briefly stated, because in a way they are derived from what has been stated in the introduction to the chapter.

9.1.2. The author's objectives for the study

The author's objectives for the study were:

A. To assess the utility of the methodology for the implementation of job redesign. Note that the methodology was to be under the control of the participating managers themselves. The author would attend meetings organised for discussions (see section 9.2). When asked by senior management, the author would give comment on the 'situation extant, as he saw it'.

B. The author would 'shadow' the four members of the RMG to observe them in the conduct of their duties. It was the author's intent to spend two days apiece on observing each member of the RMG.

C. The author would spend time with members of the RMG, discussing with them their experience-in-job, and attempt to relate this experience-in-job with the job audit statements (see Section 9.2).

D. Together, A, B and C would serve the author to evaluate whether a job classification system of the types discussed in Chapters 3 and 4 could be used for job design purposes, or if this fails, to attempt devising a classification system more suited for job design purposes.

Note that the author's comment to management alluded to under item A above, would be based on his learning covered under items B and C above. The field work in the study thus consisted of three distinct elements:

1. The data gathered in the job audit
2. The data gathered in the observations
3. The data gathered in discussion with the members of the RMG

Discussing field work, Scott (1965), on the authority of Hughes, writes:

> "Field work refers ....to observation of people <u>in situ</u>; finding them where they are, staying with them in some role, which while acceptable to them will allow both intimate observation of certain parts of their behaviour and reporting it in ways useful to social science but not harmful to those observed".

It is the last sentence in the above quotation which is important, for the author, from two distinct perspectives:

1. The comments passed to management would have to be such that specific and overall benefits would, in all likelihood, emerge.
2. The current report should not be harmful to those that contributed so usefully to the author's learning.

Further, given the stated objectives, the research undertaken could be classified as 'Action Research'. Scott (1965) writes:

> "One final point should be made about the types of obligations assumed by the researcher towards the host organisation. Research involving sustained, open participation on the part of the investigator is more likely to be "action" research - that is research directed in part towards solving the problems of the subject group - than in research conducted under other approaches".

The research being reported would fall within the class 'Action Research', as given by Scott. Nonetheless, Action Research often implies the researcher

locating the problem and suggesting remedial action (see Warr (1977)), but this was not the author's intention. The author's intention was simply to give comments when asked. Buchanan (1979) writes:

> "An interesting parallel to the growth in popularity of Action Research, therefore, has been the advocacy of worker involvement in the process of diagnosing sources of job dissatisfaction and in determining appropriate remedies".

From the above evidence it would be more appropriate to define the study being reported as one in the collaborative measurement tradition.

Following the delineation of the objectives with the initial contact (with EAT), a meeting was arranged for the author to present the study design to the host organisation. This is reported in the next section.

9.2. Methodology and Procedure

The author visited the research site and made a presentation setting out both the objectives for the study and a proposed methodology and timetable which would enable those objectives to be achieved. After this meeting, as after every other visit to the organisation, the researcher wrote notes the same day of the meeting which were then typed up. These notes (now boxed as research material in DUBS Library) are summarised in Appendix 9.1. At the meeting were present the members of the RMG together with EAT, who undertook to keep A_R posted on the developments.

The meeting resulted in the acceptance of the study plan, as presented by the author, who was then asked to set the procedure in motion.

The author devised the study procedure described below:

Study Procedure

The study procedure corresponded to the four types of field study techniques that the author planned to use.

1. The job audit

Job audit as a three step undertaking has been described in Chapter 8 (Section 8.7). Here will be described how the three steps were intended to be followed through in a particular application. A two phase or cycle undertaking was planned: the preliminary phase and the affirmative phase.

(i) The preliminary phase

In this phase each of the 6 participating managers described the inputs and outputs to their jobs and designated for each statement the individual they held responsible for each input or output. This was to be followed through by dyadic discussions where pairs of individuals classified statements, and mutually agreed on outcomes, to the extent that they could, between themselves.

The above described conciliation and resolution were intended for the RMG. Although dyadic discussions between members of the RMG and senior management were part of study design, senior management were not to take any action but wait for the results of the within RMG arrangements. The senior managers were, from the dyadic discussions at this stage, to learn of the underlying problems

and think of possible interventions, in areas where the RMG could, or would, not move on their own accord.

At the same time, the RMG were to identify areas where, in their opinion, only senior management intervention could facilitate necessary change.

(ii) The affirmative phase

Having had the dyadic discussion and the within team delineation of roles/duties/tasks, and the members of the RMG having individually and collectively marked areas where senior staff would be better placed to enact change, the senior management were to take such action as they thought fit. It was part of the plan that group discussions would be held only if found necessary and desirable.

Running concurrently with the job audit preliminary step, the author planned the following field works:

2. Observation and discussion

The author planned to 'shadow' for two days each member of the RMG. In this observation study, the author planned to take notes on time and type of action, and then attempt to relate this data to the job audit statements. Where the author could not interpret behaviour, it was planned that he would wait for an opportune moment for an explanation from the subject (of observation) manager himself: the intention being that the observer should not deflect the subject manager's attention from the conduct of his duties.

3. Discussions with the members of the RMG

In addition to the above described observation, which were essentially non-discussion, the author planned spending periods of time with each member of the RMG to draw out their experience-in-job, and attempt to relate it to the total situation being focussed upon as well as the job audit statements written by each individual with whom discussions were conducted.

4. The questionnaire

As a consequence of the understanding gained through job audit, observation and discussions, the author wanted to devise a questionnaire to generate collaborative evidence on items and areas where he discerned improvements could be made through senior management intervention.

An overview of the methodology and procedure

Locke (1977) writes that in field studies the researcher has to make a trade-off between scope and depth. The situation chosen by the author for research permitted a clinical approach, and the approach adopted was essentially clinical. The exception to the clinical approach was the envisaged use of the questionnaire. However, note that even here the clinical approach was being pursued: the author wanted to base the questionnaire on the substantive information (focussing on the situation being researched) gathered by other methods.

The diagram of Figure 9.1 gives a pictorial representation of the envisaged research procedure.

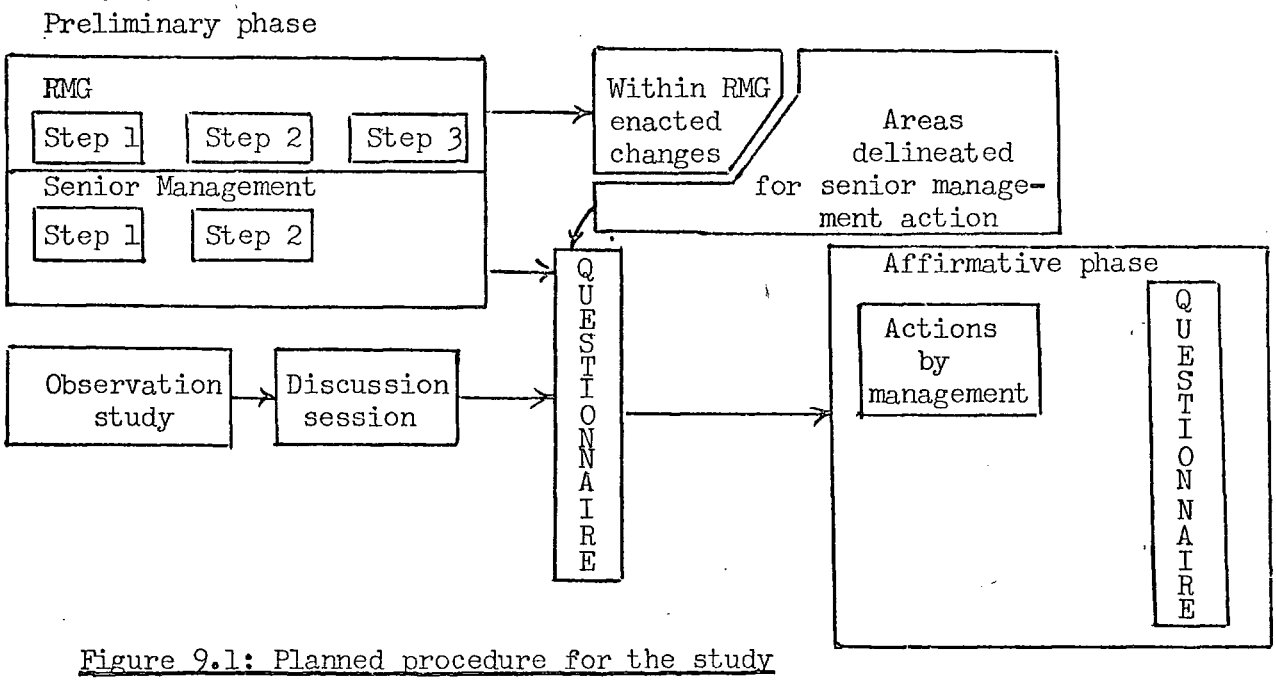


Figure 9.1: Planned procedure for the study

The author had envisaged using the questionnaire at two points: once to confirm clinical findings and later to measure the effects of change.

As the events that unfolded proved difficult and unpredictable, it is important to remember the envisaged plan - it looks so seductively simple, and so logical and made the process seem so handleable. The unpredictability mentioned here has to do with pre-emptive actions that management and those involved took while the job audit was being conducted.

The nature of pre-emptive moves and the effect of these will be discussed later (in Section 9.7). However, note that the kind of 'problems' alluded to have been reported by others, e.g. Fletcher (1978).

FIGURE 9.2

EXPECTATIONS OF RAP RELATING TO EMO

RAP

RAP.AE.EMO

40017 *DISCUSSION OF DAY TO DAY LIMITATIONS ON COLD END
40018 *HELP IN GETTING TO KNOW THE COLD END
40019 *KEEP PRODUCTION RATES ON PLAN
40020 *INSTRUCT FMN/SUPERVISORS ON OPERATIONAL REAUIREMENTS FOR CE
40021 *PLAN FOR CE MAINTENANCE AND CO-ORDINATE WITH HE
40022 *MAIN OPERATOR/SUPERVISOR TRAINING WITH HE PM
40023 *KEEP HE PM INFORMED OF MARKETING REQUIREMENTS
40024 *PARTICIPATE IN PRODUCT PLANNING MEETINGS
40025 *PRESENT A CONSISTENT MANAGEMENT POLICY FOR WPS/TU RE PS
40026 *MONITOR COLD END PERFORMANCE VS. STANDARD
40027 *MONITOR COLD END PERFORMANCE VS. STANDARD
40028 *WRITE COLD END COST COMMENTS
40029 *SET AND KEEP SAFETY STANDARDS
40030 *TO PARTICIPATE IN DECIDING ON OPERATOR AND SUPERVISOR PROMOTION
40031 *TO COVER HE PM WHEN AWAY
40032 *TO PARTICIPATE IN SHUTDOWN PLANNING
40033 *TO PARTICIPATE IN PLANT MEETINGS

RAP.PE.EMO

45080 *TO KEEP HIM IN TOUCH WITH HE PROBLEMS AFFECTING CE
45081 *HELP HIM GET TO KNOW HE
45082 *TO PRESENT CONSISTENT MANAGEMENT POLICY TO TU REPS
45083 *TO SET SAFETY STANDARDS THRO' LEADERSHIP BY EXAMPLE
45084 *COVER OE PM WHILE AWAY
45085 *TO PARTICIPATE IN SHUTDOWN PLANNING

EMO.PE.RAP

55114 *TO LET HIM KNOW OF DIFFICULTIES ON COLD END
55115 *TO AGREE MAINTENANCE PRIORITIES WITH HIM
55116 *TO SUPPORT HIM IN CONFRONTATIONS WITH SUBORDINATES
55117 *TO GIVE HELP IN EMERGENCIES ON HOT END
55118 *TO TRAIN HIM ON THE COLD END
55119 *TO DEPUTISE FOR HIM AT HOLIDAY TIMES
55120 *TO LET HIM KNOW PRODUCTION REQUIREMENTS
55121 *TO SHARE OUT DUTIES INVOLVING OPERATING PERSONNEL
55122 *TO LIAISE WITH MARKETING DEPT. ON PRODN. PLANNING
55123 *TO LOOK AFTER ALL COLD END PLANT PROBLEMS
55124 *TO LEARN THE HOT END
55125 *TO SHARE VIEWS ON PERSONNEL PROBLEMS

EMO.AE.RAP

50138 *TO MANAGE HOT END OF BOTH NO.4 AND No.5 PLANT
50139 *TO SHARE JOINT MANAGEMENT OF PROCESS MANPOWER
50140 *TO AGREE MAINTENANCE PRIORITIES
50141 *TO TRAIN ME ON THE HOT END
50142 *TO GIVE PARTICULAR HELP ON CHEMICAL ENGINEERING ASPECTS
50143 *TO LET ME KNOW OF DIFFICULTIES ON HOT END
50144 *TO GIVE HELP IN COLD END EMERGENCIES
50145 *TO DEPUTISE FOR ME AT HOLIDAY TIMES
50146 *TO PRODUCE PLANT PERFORMANCE SUMMARY SHEETS

9.3. Data

In this section will be presented an overview of the data collected during the study and some uses made of this data.

Job audit

A full description of the forms used for collecting the job audit statements is presented by Woolley (1978). Figure 9.2 shows the format in which reports were presented to the study participants.

Altogether 6 participants, initially, wrote 257 statements in the job audit preliminary stage. Following the style of the formatted report layout of Figure 9.2, the diagram of Figure 9.3 gives the breakdown of these 957 statements

	A_R	-	EAT	9	18	
	A_R	-	JEL	18	9	
	A_R	-	RAP	15	17	
	A_R	-	EMO	21	17	
	A_R	-	RGB	1	18	
	EAT	-	JEL	10	7	
.AE.	EAT	-	RAP	24	9	.PE.
	EAT	-	EMO	30	7	
Total = 253	EAT	-	RGB	30	4	Total = 146
	JEL	-	RAP	10	6	
	JEL	-	EMO	10	8	
	JEL	-	RGB	1	2	
	RAP	-	EMO	17	2	
	RAP	-	RGB	41	6	
	EMO	-	RGB	16	6	
	A_R	-	EAT	12	38	
	A_R	-	JEL	13	6	
	A_R	-	RAP	14	34	
	A_R	-	EMO	14	29	
	A_R	-	RGB	2	27	
	EAT	-	JEL	19	19	
.PE.	EAT	-	RAP	63	40	.AE.
	EAT	-	EMO	52	39	
Total = 270	EAT	-	RGB	32	8	Total = 288
	JEL	-	RAP	12	20	
	JEL	-	EMO	12	8	
	JEL	-	RGB	2	2	
	RAP	-	EMO	6	9	
	RAP	-	RGB	10	5	
	EMO	-	RGB	7	4	

Figure 9.3: Breakdown of the numbers of expectation statements written by MRG

Through modifications the number of statements later increased by around 25%. Thus in the final job audit reports were around 1,200 statements. Given the standard computer print-out, these formatted reports spanned 50 sheets.

During the job audit the number of individuals that the members of the RMG maintained contact with outside (i.e. external to the team and the 2 bosses included in the study but within the works site) was found to be 64. A further 5 types of contacts were of the group aggregate variety, i.e. unions, etc. The connectivity is depicted in Figure 9.4. In addition to this there were around 80 operating level personnel, including the foremen and assistant foremen for internal contacts.

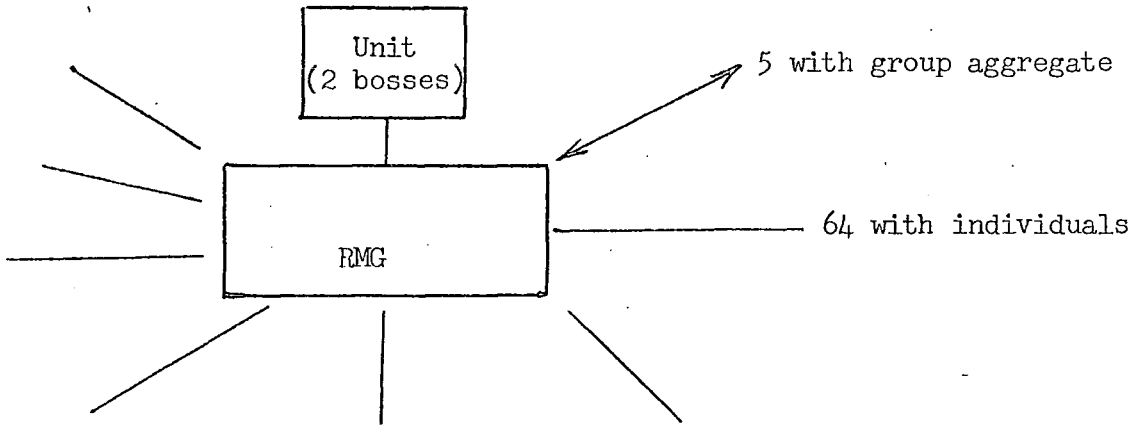


Figure 9.4: Outside contacts of the RMG

The job audit data was used by the participants for dyadic discussions to define and determine their jobs as well as delineate areas to be brought to the notice of senior management. The author used this data to attempt classification which could be useful for job design purposes. The study participants also contributed to the attempt at classification.

The observation study

Data gathered in this effort is summarised in Appendix 9.1. Members of the RMG did a lot of walking about on the plant site. The author 'shadowed' them and made on-the-spot notes. Later the same day, in the evening, these notes were updated in the light of any conversation that the author had the chance to conduct while involved in observation.

These reports proved of great value in framing questions on the nature of work later in the discussions with members of the RMG.

The discussions

Data gathered in these sessions was perhaps the most fruitful for gathering experience-in-job which could then be related to the job audit statements to give meaning and interpretation leading to diagnosis, and theory building (see Chapter 11).

9.4. Facilitating the job audit

To facilitate the three steps (see Section 8.7) of the job audit the author prepared various forms which would prompt the participants to analyse the job audit statements and lead to delineation of areas to be negotiated. An example of the kind of work done is shown by the three exhibits of Appendix 9.2.

The three exhibits of Appendix 9.2 are:

1. The covering letter sent to each participant.
2. The form for the individual to make notes on classification and acceptability of the job audit statement. (Note the exhibit shows the form for the perceived expectations; a similar form was included for the actual expectations; see covering letter).
3. The form for the individual to match his expectations against those written by his dyadic opposite. (Note the exhibit shows the form for the perceived expectations; a similar form was included for the actual expectations; see covering letter).

The kind of analysis done on the 2 forms explained under item 3 above, not only facilitated their primary purpose but also helped the author in his attempts at classification.

9.5. Classifying the managerial job

Before embarking on this field research the author had carried out extensive and structured study into the nature of the managerial job; the work of this phase has been reported in Chapter 3. One of the purposes of the field study being reported was to attempt to test if any of the models of the managerial job, discussed in Chapter 3, would prove of utility for job design purposes.

Scott's (1965) comment that:

> "There exists no widely accepted category system for describing and analysing the activities of the occupants of organisational positions".

was not lost but since there seemed enough a priori reasons to believe that classification might help in synthesis, various approaches were attempted.

Attempts at classifying the data collected in accordance with any of the available classifications proved fruitless - the effort was, in fact, in vain. But something good did come out of this effort. However, before describing the good things, the failure will be analysed.

Mintzberg in his scholarly work on the nature of managerial work states the dilemma of classification brilliantly:

> "Like Rosemary Stewart I began the research into the intention of recording the function area associated with each contact and piece of mail. However, it soon became clear that the difficulties of categorising this would not be overcome. For example was I to record a monthly report containing sales and production figures as 'marketing', 'manufacturing', or 'control?' In the case of a meeting to sort out a conflict between two manufacturing executives, was I to record 'manufacturing' or 'personnel?'
>
> The neat functional categories that we tend to use appear to be of little help in the study of managerial work, simply because the manager's work involves such a complex intermingling of these functions. Then, I present no information on functional areas and we could question its validity in the studies that do".

Stewart, with her long experience and established reputation, along with her seasoned researcher-observers, on the other hand, attempted to use Mintzberg role classification and reports (Stewart (1976)):

> "The relative importance of the roles differs greatly in different jobs; they do not apply in all managerial jobs; it is hard to allocate some activities to his categories; and some of his roles, especially that of leader, are too broad to be of practical use".

And, again, Stewart (1978):

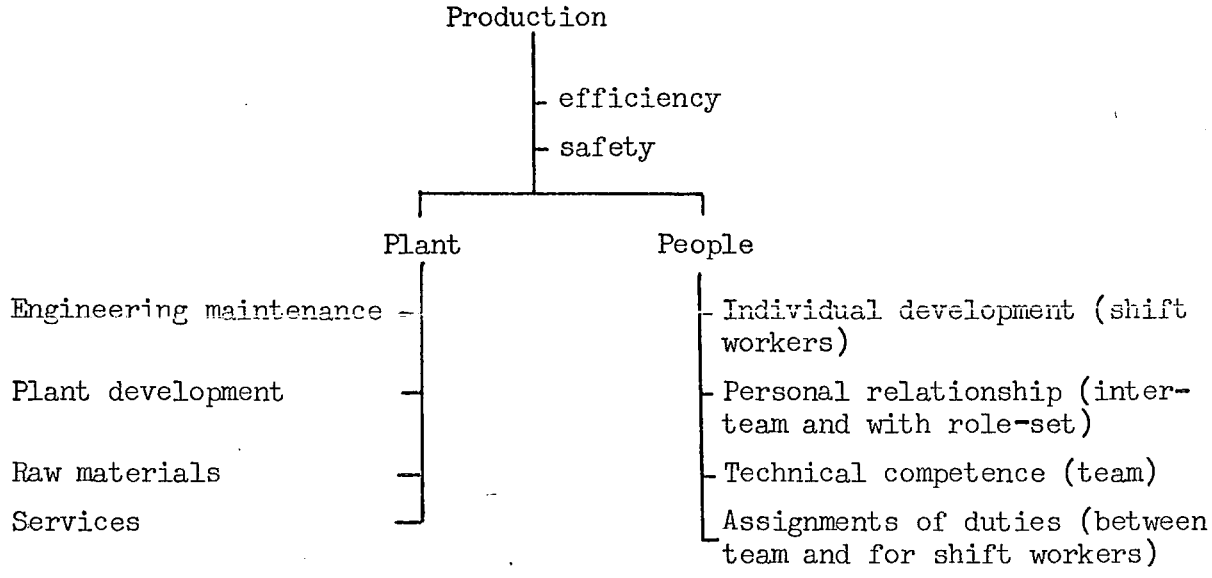
> "We attempted to use Mintzberg's role in the observational record, but all of the four observers taking part in this, and an earlier study, found it too difficult to determine to which role many of their observations belonged. The attempt to use Mintzberg's role as one of the ways of classifying what the manager did was, therefore, abandoned".

While the author was engaged in devising a classification schema, and finding it extremely difficult, he asked the section manager to suggest a classification framework. The section manager, well aware of the works of Mintzberg and Stewart, after considered thinking, presented the researcher with the following 10 item classification schema:

1. Production (how much, what, quality cost)
2. Engineering and maintenance
3. People
4. Safety
5. Development
6. Efficiency (cost control, control)
7. Personal relationships
8. Climate
9. Contacts with other parts of the organisation
10. Technical competence

The section manager had used the above type of schemata for writing down his expectations. The author still had difficulty in analysing the other Job Audit statements even on this set of primitives. At this point the researcher asked two of the plant managers if they could analyse the job description statements written by them (individually) on the above listed constructs. They too were not successful, but presented the researcher with their own frameworks for analysis.

As a result of the above experience the author temporarily ceased attempts at classification, but later making a fresh start he devised the following schema:



The schema was presented to the study participants and they accepted it as a valid classification, and they saw its use in job design.

The author would now present his conclusions, derived from the above experiences, but with support from literature on classifications of the nature of the managerial job and the usefulness thereof.

Marples (1967) discussing classifications of the nature of the managerial job writes:

> ".... the classifications have been chosen without reference to a basis of comparison and the data itself has been shown to be inaccurate in fact and ambiguous in interpretation. The purpose of these studies have also been relatively vague and so far, have had more value to the researcher than the practitioner".

The author subscribes to the above viewpoint with minor reservations. The only use shown of typologies of the nature of the managerial job has been in job evaluations. However, the fact that more than one job evaluation scheme exists together with the fact that in job evaluation, once the scheme is agreed upon, the jobs are judgementally (often an euphemism for arbitrarily, see Chapter 3) mapped onto the schema, is evidence to suggest non uniqueness of classifications.

Wilke and Young (1972) performed a functional classification, but they were aware of the subjective nature of the classification they produced. Prior to presenting their classification they gave the following disclaiming caveat:

"The division of episodes into functions is subjective and any division is open to criticism. There is no universally agreed system. This attempt is also arbitrary ...."

From his own experience and with the support of the above quoted evidence the author concludes that the models of classification presented in Chapter 3 are essentially more a product of the researcher's mind than anything else - "good for reading", "go some way in increasing the reader's knowledge of management" but all fundamentally incomplete. Of course, to the researcher working, or intending to work, in this area this could be a joy - given that any model is bound to be incomplete, there is much scope for Ph.Ds and papers! Therefore, a tentative suggestion is made that:

(a) Until a schema devised can be employed for something other than simple description, and

(b) the devised schema can be verified as replicateable for classification of statements (standard) by different researchers,

publication of classifications must be accompanied by statements denoting who found the classification useful, for what purpose, and how much more useful the new schema is compared with the existing ones.

Note that the above are the types of evidence demanded by Drug Registration Authorities for the registration of new drugs. The fact that these demands do not curtail genuine research and advancement but only weed out the useless and outright fraud should be accepted as evidence that genuine discovery will not cease consequent to the acceptance of the above suggestion.

The good that came out of attempts at classification has to do with the author's conclusion regarding the quality of data made available through the methodology being tested: the data is at a level of abstraction that suits the participants, but may not (but then again it may) be amenable to classification.

Marples (1967) discusses a "sequence of episodes from 'a foreman's week'" of which he says:

"All the episodes are described in 'task' terms".

Marples attempted to understand the task description terms through discussion with the foreman. The ensuing discussion could be put in the dialogue form as follows:

Researcher: What was the objective of the activity?
Foreman: In six months I increased the production by 40 per cent.
Researcher: How did you manage that?
Foreman: Just jollying the chaps along.

Marples writes:

> "Now it is clear that none of the episodes descriptions as he gives them refers to this aspect of his activity. Conceivably each of them could have been described 'interaction' or 'relationship' terms as well as in 'task' terms".

This then is the nub of the problem of classification: One individual perceives a set of statements to be in 'task' terms, but the imposition of other analytic frameworks, e.g. of 'interaction' or 'relationship', would have been equally acceptable, and the imposed classification would have neither added to, nor detracted from, the basic understanding, once that is acquired.

The value of the involvement of the individual and the role-set, the possible classification of the role expectations and the pinpointing of matters where consensus is lacking could be regarded as more obvious; but Marples indicates an even more fundamental job design consideration when he suggests the classification of areas where differences of opinion (the role-set opinion) prevails:

> "The main value of classification is derived from a comparison of the characteristics of the actual problem 'portfolio' with the official job description and the manager's role set. If the behaviour does not match expectations, the pressures causing the manager to accept inappropriate problems can be relieved, perhaps, or deliberate attempt can be made to modify the job description and role set so that either way the divergence between behaviour and expectation is reduced. If this is the aim, it is only useful to classify a manager's problems in terms used by his associates to describe his role, and role descriptions are an essential preliminary to the classification of the problem".

Note that Marples is suggesting:

1. The incremental value of classifying 'problems'.
2. The problems have to be (a) related to the individual's understanding of his job
   (b) related to the role-set understanding of the position incumbent's job
3. The articulation of both the job description (i.e. job audit statements)

and 'problem' areas has to be in the language of the job holder and his role-set.

The above analysis shifts the focus to the use of language, a notion that was earlier discussed (in Section 8.6.3.) theoretically; the subject will now be discussed in the light of field data evidence.

The author had designed a form on which the study participants were asked to indicate the match between the actual expectations that each one of them had written as 'subject' and the 'perceived' expectations written by their dyadic opposite (see Section 9.4).

For the moment, focusing on the RAP-EMO dyad, these individuals were able to find matches for all their 'subjectively' written statements with the 'perceptual' statements of their dyadic opposite. Figure 9.5 shows the number of statements written by the dyad. The matching was not in terms of 1 to 1; but 'many to one' and 'one to many'. The way the statement matching occurred is illustrated in Figure 9.6.

	RAP	EMO
Actual	17	9
Perceived	6	12

Figure 9.5: Number of job audit statements written by the dyad RAP-EMO

(Note these numbers match those in Figure 9.2. these numbers are from the reconciled statements whereas the earlier numbers indicate initial run).

Any meaningful attempt at classification would, under these circumstances, involve the following:

1. Resolution: breaking up the many-to-one relationships into elements with one-to-one correspondence; extending the resolution to the one-to-many type of statements, similarly.

2. Abstraction: Choosing or devising a system of classification at the requisite level of abstraction, and one which would be conceptually useful for whatever purpose (for the purpose of this thesis - job design).

Thus, abstraction would be the final step. But Machin (1979) writing on levels of abstraction in the context of EA notes:

> "A detailed situational analysis would indicate that in one or more respects each manager's job is unique, whilst a system analysis at the appropriate level of abstraction would show that manager's job contain many identical elements".

In other words, situationally an abstraction schemata could be developed. And this was done. However, and the author wishes to put it equally forcefully, generalised classifications, being at a very high level of conceptualisation could be regarded as having low utility.

In conclusion, then, it appears to be the case, at least for managerial job synthesis purposes, that no universal, or general, method of writing the statements for job audit can be recommended. Likert (1967) could be interpreted as saying:

> "That the effectiveness of various management practices depends to a considerable extent on the expectations of, and the way these expectations are perceived by, the manager's boss, his subordinates and his peers. These perceptions are the psychological environment.

With respect to the psychological environment, group understanding of common language is more important than system of classification imposed by the researcher This is an important concept; it will be elaborated in terms of data collected during job audit and the ensuing dyadic discussions.

- The item under discussion pertained to relationship between the RMG and another department within the firm. The individual responsible for it had described it as 'co-operation'. The section manager was of the opinion

that it was not 'co-operation' but 'liaison'. The subtle difference in the role, emerging from the discussion, implied in the two articulations, was an awakening for the team member concerned. He ended up suggesting that he would, in future, operationalise the role differently, i.e. the slight shift of emphasis constituted a change in the nature of the inter-departmental activity for the manager concerned.

- In another dyadic discussion the contention arose out of the use of words: 'advising' and 'helping'. Whereas one individual had used 'to advise' and matched up the expectations of his dyadic opposite where the word used was 'to help', the other manager did not match the statements. In the discussion it emerged that the disagreeing manager did not consider 'advise' as 'help'; 'advice' he regarded as something anybody could give but 'help' to him was a more concrete concept, i.e. he wanted the other guy to go over and do some of the chores, when conditions of overload existed.

Only two examples are given, for illustrative purposes. Many such concepts came under scrutiny, and discussions led to various degrees of resolution.

Thus, the author is led to conclude that the author's theoretical considerations (see Chapter 8) which led him to suggest that job design methodology should be 'language-free' was appropriate and the possession of this characteristic by the methodology used stood up to the test. Further, as suggested in Chapter 3, the progression:

Description → Classification → Dimension → Factors

are processes of increasing abstraction: data at the level of descriptions can only be made more abstract, hence of less direct utility. This means that classification can only 'degrade' the data, as far as job design is concerned.

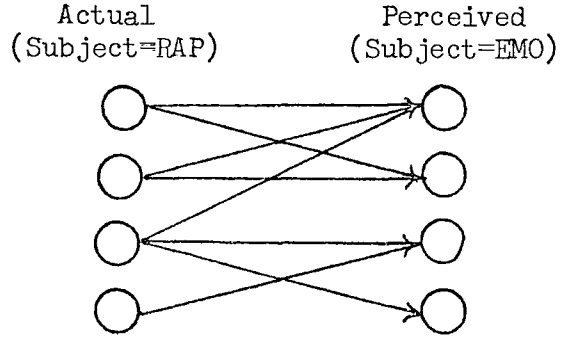


Figure 9.6: Illustration of matching the job audit statements

9.6. The dynamics of within RMG changes

During the conciliation and resolution steps of the preliminary phase modifications to jobs began to take place. The within-RMG dyadic discussions produced changes and resulted in diagnosis of areas where senior managerial intervention was required. The within-RMG negotiated discussions led to the following type of modifications:

- Institution of a weekly meeting for the RMG, to which would be invited other people, if necessary
- Rearrangement of work between individuals
- More frequent and appropriate feedback by each member as to how well the others were meeting his work related expectations, especially if previous effort had been found wanting
- Discovery of task areas which previously had not received coverage because individuals had assumed the other were responsible first. The focus on these led to allocation of duties to cover these areas. (These tasks were on the boundary of jobs (as derivable from job titles) and were essentially of 'less interest' kind).
- Discovery of tasks for which more than one individual claimed responsibility. These were also on boundary of jobs but were of the 'more desirable' kind. Negotiations led to allocation of responsibility.

The above discussed type of modification could be summarised with the aid of the diagrams of Figure 9.7.

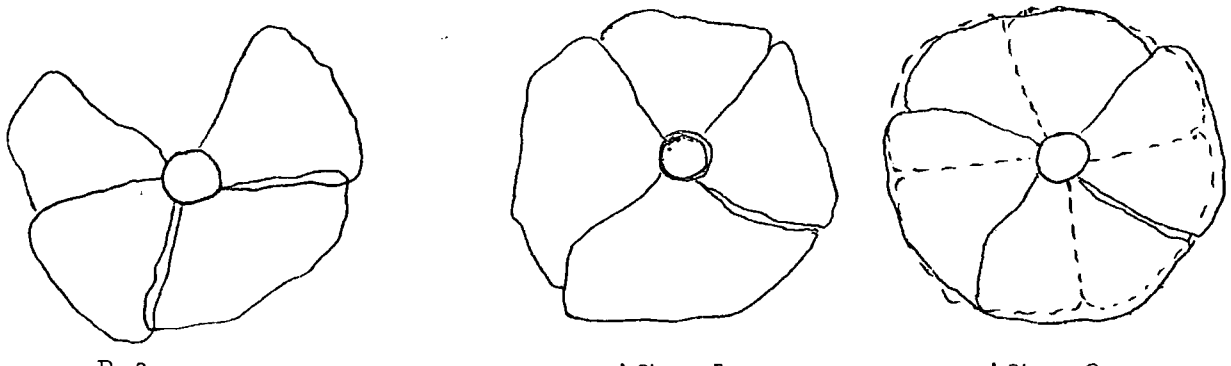


Figure 9.7: Diagram depicting the job coverage for the RMG before and after the conciliation and resolution steps

The diagrams of Figure 9.7 show flowers, the cores of which represent the integration of the RMG; the petals of the flower represent the work/job areas covered by individual members of the RMG. Overall the diagram indicates:

1. Before the job audit. Over some areas job cover had been limited (i.e. each individual assumed the others were responsible for it. On the other hand, there were some areas which more than one member of the RMG was willing to call his own.

2. After the conciliation and resolution phases, the diagram depicts:

   (a) Initially. It led to a full cover of the duties together with greater effort at integration (i.e. through the newly planned weekly meeting).

   (b) Subsequently. Effort was made to define areas in which secondary cover could be provided in the absence of the individual whose primary responsibility the area was.

Author's observation on inter-RMG discussions

It was the author's observation that during the dyadic and inter-RMG discussion, every individual tended to avoid situations which might lead him to 'treading on someone else's toes'. The within RMG coverage was arranged, always, with reference to job titles:- "This task is of this nature and since your (or my) job title is this, you (or I) should be doing it". If matters could not be decided with reference to job titles these were left for senior management to make the final decision.

Note that in the within-RMG negotiations, no transfer (of work or individuals was touched upon. Only task coverage, and performance related to these tasks was the subject of negotiation and discussion. Task coverage, however, is only one aspect of job design!

Further, work load, to the extent that it formed part of the discussion, was in comparative terms: "You have so much, I have so much". The individual's capacity (skills/time, etc.) in the absolute sense was never under discussion. They therefore never discussed one of the researcher's main interests which was "Could the total job have been done by, say, three people instead of the four?" or "Were, say, five people required to handle the total job instead of the four?"

Given the earlier mentioned fear of treading on the other toes, it would be unlikely that absolute job and load conditions could be adjusted within a team, such as the RMG on their own because they rely on higher authority for this aspect of their jobs.

However, and given the interplay of authority, naturally, job audit statements from which job load (qualitative and quantitative) could be discerned were put by members of the RMG as the expectations they held of the two senior managers participating in the study.

Job design diagnosis - researcher's view

The weaknesses, from the researcher's perspective, in the design of the RMG jobs, following the conciliation and resolution steps, together with a brief description of each item are now presented.

The diagnoses were made from the information collected during the period of shadowing the plant managers; from interviewing them; and from attendance at all the dyadic discussion sessions. Thus the diagnoses were derived exclusively from the field data collected by the author. That is the way the author believes it should be, i.e. for diagnoses to be derived from the job holder's experience-in-job. These diagnoses required cultivation of appropriate level of contact with the job holders. So, in a way, they are subjective and judgemental. However, the fact that the author had pursued the clinical tradition has been stated earlier. Equally, the author accepts that subjectivity is always inherent in observational studies. The detailed field notes (see Appendix 9.1) document what the managers said and/or did as accurately as possible and without interpretation, yet subjectivity is inherent in the choice of items to be recorded.

Dalton (1959) writes:

> (Researcher in his duty) "obviously requires careful and intimate contact. Studying them at a distance the investigator may be so "objective" that he misses his subject matter and cannot say what he is objective about".

Thus the author consciously strove to be as objective as possible with regard to his mission. The subjectivity in the material to be presented arises from its nature - job holder experience-in-job. The diagnosis will be presented in the following nine sub-sections, where type of job design deficiency forms the

heading and individual job holders having that deficiency in their jobs are mentioned within parenthesis.

1. Fuzziness of goals/objectives/role-requirements (JEL, RGB)

This aspect of fuzziness can be dealt with at two different levels:

(a) Not knowing what is expected
(b) Not knowing how to go about achieving it

The latter aspect - not knowing how to go about achieving it - is usually associated with global goals like: increasing profits, improving plant operations, etc. It is the lack of target value that makes these goals fuzzy. How will the person know when he has achieved it, whatever it is that he is trying to achieve, and how will others recognise it as correct, never mind meritorious? The target values lie in the domain of measures on performance. Something definite has to be achieved within a certain time span, within certain budgets. Plant improvement is a very vague concept.

During the period the research was conducted there was no definite development project under way.

Improvements to plant operating at only 70% capacity can be difficult to justify. The plant, by the standards of the company, was old and the more obvious improvements had been made by a succession of earlier plant development position holders. It was, thus, difficult to dream up really innovative changes. JEL also had the feeling that projects that were dreamed up by the section manager and other senior management were more likely to succeed. Under the circumstances - given the ad-interim section manager - no new projects for plant development were likely to receive the green light.

Improvement as the objective is rather nebulous, but as soon as a project is under way, the objectives become clear. JEL would have liked the section manager to assist him in defining projects worth his while. At the moment, he was involved in 'stretch-work'.

Till now he had only received assignment to one project - the Tiger project - but this was rather a liaison role - he had to supply supportive technical information on the plant to the project team. The actual project was in the hands of Process Developments Department.

RAB on the other hand had no knowledge of what was expected of him. The time horizon of his work was limited to being told, by the other plant managers, more or less on a day-to-day basis: "Could you do that, Bob, please?" etc.

2. Qualitative Underload (EMO, JEL, RGB)

It is rather difficult to define the concept concretely. EMO and JEL did not know how their careers were progressing - rather they had assumed the worst. They desperately looked for assignments that would give them an opportunity to prove their worth - to themselves and to the management who had failed to recognise them. The fuzziness of goals in the case of JEL was rather a destroying factor too. Both EMO and JEL suffered from non-achievement and non-recognition symptoms. They both knew that they were able; only no opportunity was given them to show and prove their ability. RGB had the additional worry of not having a coherent job definition. He had a feeling as if the other three plant managers were contriving to hand over to him bits and pieces of small time work, which did not really constitute a real job.

3. Quantitative underlaod (JEL, RGB)

To a degree this is tied up with the two topics dealt with earlier. However, it has a facet of its own. RGB tried to overcome his lack of goal clarity and 'bits and pieces' position by doing jobs that could easily have been assigned to operating level personnel, say the foremen. This behaviour was consistent with his earlier career in the company - he knew the job and could thus create fulfilling assignments for himself.

JEL tried to overcome his situation by pitching-in and helping EMO in his operations work. However, this, although providing him with opportunities where he could see some results and while acceptable to EMO, had the danger of appearing to senior management as overlap of duties.

The situation was essentially one in which work was created to keep busy to avoid boredom and void.

4. Field of activity different from specialism (RGB)

In the case of RGB this was a major contention. RGB could claim past achievement in the field of plant operations. He had worked throughout his

career on paraxylene plants. The older plants had required constant attention and he was nurtured on that kind of work. He knew his capacities but wanted to learn more about the process operations. Being a slow learner, he did not enjoy attending short courses. He wanted courses and teaching organised in-house so that he could learn at his pace. The bits-and-pieces of work assigned to him were invariably of a "personnel" nature. This, he assumed, was done because he had been a foreman and everybody took that to mean he knew how the operators etc. behaved, and how they could be assigned work. However, the problem is that the foreman on the older plants was a technical person. In the past the foreman had greater technical role than the personnel one. He wanted to remain a technical person. The current plant, being more sophisticated, did not have the kind of opportunity he was seeking.

5. Job erosion (RGB)

The technological causes of job erosion have been covered in item 4 above, but RGB further felt that the other plant managers, perhaps on account of their better plant know-how, gave him "odds and sods" to perform. There was no succinct whole piece of work "pitch" he could call his own. He felt cheated and suffered dissonance, although, of course, the dour Scot submitted to the company culture and did not openly show it.

6. Senior managerial style as perceived by team (JEL, EMO)

(a) Contact

Some members of the team felt strongly resentful about the lack of contacts with senior management. The lack of contact was both physical and mental; the physical getting the emphasis only because it was deemed that physical contact would lead to better understanding, i.e. the mental contact. The contact side was emphasised for another reason as well - it was the contact, or rather the lack of it, that brought about all the other conditions and improvement in it could lead to improvements in all other areas. They both felt that the managerial style was off-handed and rather bureaucratic - in some ways also petty, and rather devious. They thought that senior management had a non-optimal system for dealing with and assessing their performance.

(b) Lack of feedback on performance (JEL, EMO)

Both members rather felt that they did not receive any feedback on performance. This could be explained as a specific example of lack of contact. For JEL it could further be explained by his lack of goal clarity coupled with his achievement orientation leading him to a position of total void regarding his work.

7. Violation of the sense of equity

(a) Salary (EMO)

Two of the plant managers were on grade 13 while EMO was on grade 12. He had been with the plant longer than the other 'Plant Managers'. To a certain extent he could claim greater knowledge of the plant, and for some time had worked on the heavier workload end of the plant. He therefore could not see the justice of the system that paid him less than the man who 'did less work', had the same educational standing, had been with the company less number of years, and had even the same job title, i.e. plant manager.

The other person on grade 13 was the Development Manager. This was also galling because the development manager could not even show any real output for his labour. At one moment EMO even said that the development job could be handled at grade 10. This statement was made only to illustrate the inequity of the situation.

(b) Team Leadership (EMO, JEL)

It was believed that RAP was being groomed for the team leadership and it was assumed to be the prime motive for transferring him to the plant. As previously, work on the plant had been more the work of co-equals, this was seen as a reduction in their own status. This to a degree violated their sense of equity and justice.

8. Uncertainty

(a) In-career plans (EMO, JEL)

Both had assumed that they would not get further promotions, and probably not even a higher salary grade within their current position levels. This itself was not the uncertainty - they had assumed this much and learned to live with it. Senior management had not discussed alternatives to promotions in

careers. This was the uncertainty that was uppermost in their minds. They were 'partly employed' - job underloads - and so were seeking alternative jobs; of course, within the company. The company pensions were very lucrative; it was the normal company practice that if the company asked the position holders to retire earlier most employees could negotiate a good deal for themselves. But these early retirements were often after about 18 to 20 years service. So these people could not think of leaving thecompany of their own accord. They, therefore, would have preferred management to discuss alternative jobs. The company atmosphere precluded the individuals from taking initiative to raise this problem with the senior staff.

9. Team spirit (RAP vs. EMO, JEL)

Notwithstanding the fact that openly there was no hostility, surface level co-operation was good. At the sublimal level, there was "why him" feelings that EMO and JEL held with respect to RAP. As a consequence of this shared feeling EMO and JEL had evolved a dyadic clique - based on shared experience of helplessness.

9.7. Conclusions of the field study

The conclusions reached from the study are of two types:

1. Organisational purpose
2. The author's purpose

The conclusions will be presented in the above-listed order.

Organisational conclusions

Foremost it should be understood that any changes introduced as a consequence of studies of the type being reported are the responsibility of, and emanate from, senior management. The consultant-researcher or whosoever does the basic diagnosis, unless the diagnoser is senior management itself, is not the person who introduces change. The consultant-researcher can, however, if asked for, propose solutions. During conversation between the author and the senior management, not losing sight of the fact that changes in the jobs of the RMG would involve, and more to the point be prompted by, senior management, the author had attempted to ascertain the limits to changes that could possibly be introduced.

Awaited arrival of new Section Manager

While the study was under way, towards the end, the new section manager, AJM, took charge of the position. EAT stayed with the study for two reasons:

1. To give continuity - which was essential for the study.
2. Responsibility for training - one of EAT's responsibility areas was training. In this capacity he continued his association. The outcome of the project was important for his own learning - if successful he could apply the method to other plants.

The Organisational Delineation of Problem Areas

In the first half of December (the fifth month since the beginning of the study) EAT sent the letter presented as Exhibit in Appendix 9.3.

Senior management had thus, through the use of the methodology, not only delineated the problem areas but also devised a policy of change.

The final changes introduced, with respect to plant management, included:

1. RAP transferred to another plant.
2. RGB similarly transferred to yet another plant.
3. EMO given team-leaders' position.
4. Steps under way to get EMO's job reclassified on the basis of his new job.
5. A new person brought into plant management. The new person given the 'junior' plant manager position.
6. Moves under way for the Product Group Manager to arrange to see his Plant Managers more often.
7. (The arrival of the new section manager, although not brought about as a consequence of the study, had the potential of meeting JEL's expectations).
8. Management decision to intensify their existing policy of setting up special projects for individuals to relieve them, periodically, of plant duties.

Interpretations on the possible consequences of the above listed outcomes

1. The removal of RAP had the potential of assuaging the grievance that JEL and EMO felt regarding their perceived lowering of status.
2. EMO's appointment to team leader position had the potential of reinforcing his self-esteem and opening for him the avenue for proving, by his performance, his abilities. It also opened the way, as he saw it, for management to rectify his salary grade assignment.
3. RGB's assignment to a different plant had the potential of giving him a job where his skills, abilities and knowledge could be used to his satisfaction and at greater satisfaction to the company.
4. The arrival of the new section manager had the potential of ensuring JEL received as much support in his work as was needed for starting and progressing plant developmental projects. It should be pointed out that the new section manager, during a previous appointment, had undertaken development work on the same plant.
5. The changes carried the potential of rectifying job underload conditions. Further, some of the duties previously undertaken by RGB could now be devolved to the shift foreman level, thereby enriching those jobs as well.

6. The increase in special projects had the potential of providing change which often (see Chapter 3) has an invigorating effect.

The place of the consultant researcher

The author proposes that in organisation change strategies operating at the level of the individual, like job design, the consultant as a change agent would be highly recommendable, and is perhaps a key to diagnosis. It is an arguable contention of the author that outside change agents can operate more successfully than internal change agents. The boss may find it hard to succeed in the diagnosis phase. The relationship between the boss and the people whose jobs are being analysed becomes established and stabilised: either too closely or too distantly. In either case, however, the following situations may emerge:

- the subordinate may be unable to devise ways of introducing desired modifications to his job
- the subordinate may be unable to 'pass the message' on his job's ill design
- the subordinate may overall feel the effects of ill design but be unable to articulate and pinpoint (analytically) the causes
- the subordinate may be unwilling to 'open his mouth', thereby, possibly, prejudicing his future career

At diagnosis an internal consultant could be more successful than the boss. The root cause of the problem can only be determined, if ever, by having a kind of relationship which only an external person, without any personal axe to grind, can build up with the participants. Internal consultant would thus be successful to the extent that he can distance himself from organisational connections.

The author's purpose

The author's purpose in conducting the study was:

1. To test the methodology
2. To evaluate the appropriateness of some of the existing methods of classification or devise a scheme that could appropriately be used for job design.

3. Gain further knowledge and gather evidence for building a theory of managerial job design

Regarding the second of the purposes the author has already stated his conclusion in Section 9.5.

The interviews and 'shadowing' which resulted in the diagnoses helped the author to gain insightful knowledge which helped towards the building of the theory presented in Chapter 11 and led to the study on heuristics reported in Chapter 10.

Regarding the first of the above stated objectives, the author concludes that the methodology was found to work, and served well in its current usage. However, and this is a tentative statement given the limited testing, the presence of an external person (in the form of consultant/researcher) may be necessary.

Last words

1. Reallocation of duties

The establishment of the new team should have necessitated re-negotiation of the plant roles/duties/tasks that had earlier been negotiated between members of the old team. This, if done, was without author participation. The author believes that the reports generated from the job audit and the earlier negotiations would have facilitated the re-negotiations.

2. No questionnaire

As soon as diagnoses were available (the senior management's own and the author's) management took action. The author had no time to design questionnaires either to validate the diagnosis (hypothesis) or to measure the effects of change. Given that the original study plan, devised carefully and thoughtfully, included the use of questionnaire, it was clearly the case that the author placed a certain amount of value on the use thereof. The fact that questionnaires were not used in the study made the researcher reflective and he wondered whether deviation from plan had somehow diluted the study.

The overall methodology for this study, as oft enough stated, was clinical.

The sole use of questionnaire is often referred to as the mechanical method (Campbell et al (1970)). The overall planned methodology could, therefore, be described as mixed.

In a research setting similar to the one of this study Hodgson et al (1965), in deriving their conclusions wrote:

> "To construct questionnaires, we had to know the salient dimensions of the situation we were studying. It took about a year of fieldwork to find them out and by that time we were already obtaining so much data that questionnaires would have been of no incremental value; also, the reader can readily see that constructing questionnaires on the topic we were researching would have been indelicate, to say the least. Even if our respondents had been able to answer such questions as we might have asked, they would have tended not to, and their trust in our discretion would have been greatly reduced. We chose to use what methods we could to continue investigating a topic of interest, rather than to abandon the project because the 'objective' methods of research were closed to us".

The operative concepts in the above quotation are:

1. Incremental value of questionnaires once diagnosis has been made.
2. The delicate nature of the subjects which the questionnaire items would have had to deal with.

Additionally, developing questionnaires which draw out the information, specific to the situation, sought by the researcher is a slow and time intensive process. When diagnoses are available, should industry (and would they?) wait until the researcher has done 'his bit'? In this study they certainly did not. Whether they should have done so is a debatable issue.

In conclusion, then, the author has no regret regarding the non-use of the questionnaire. So the author's position with respect to questionnaire for job design diagnosis is that, while he does not totally gainsay their value, he would question their compulsive use.

Chapter 10

CHAPTER 10

MANAGERIAL HEURISTICS - A STUDY OF THE LINKAGES BETWEEN JOB DESIGN PRIMITIVES

Introduction

The study reported in this Chapter was undertaken to help the author gain a deeper understanding of some of the job design primitives which in literature are often discussed statically . Typical example of the static studies, by way of explaining the use of the term, would be the investigation reported by McCarrey and Edwards (1972) on differences in individual orientation. Taking the primitives 'recognition' and 'achievement' , these researchers were able to map the orientations of individuals, in a population of biologists, onto the primitives. At a primary level this is a fundamental research finding but it would be exceedingly difficult to use the concept or the result for any purpose in an effort to improve organisational performance or even help the individual to achieve desired outcomes, in the work environment. Investigations culminating in such findings are static in the sense that they do not indicate whether in the opinion, based on experience-in-job, of the subjects, in the dynamics of an organisation 'achievement leads to recognition' or 'recognition leads to feeling of achievement'. Such relationships, on the other hand, could be in the minds of people employed in organisations. In support of this last remark is quoted the following text from Hackman (1976):

> "When a member infers that the opportunity exists to attain certain personal satisfaction in a given group, the nature of behaviour in response to that observation also will depend upon his perception of "what leads to what" in that group setting".

The above quote draws out the implication of "what leads to what" from the individual perspective. Peters (1979), on the other hand, draws out the importance of the same concept for the individual/organisation interface. Peters suggests that the job of the senior managers is to convince those subordinate to him that:

> "the rewards will tend to flow to those who are working most vigorously and imaginatively to advance the chosen thrust",

that is to say, there should be an implicit, or possibly explicit, understanding on 'performance leading to rewards'.

Thus, 'what leads to what' is the main theme of this chapter.

The image and concept that the quote from Hackman, given above, conveys is one of strategy based on discovery. The concept of strategy formulation, application and reformulation of strategy when so necessitated by unfolding events and circumstances is effectively covered by the word 'Heuristics'.

An individual's heuristics are the product of his personality (which determines his goals) and the environment - his job. Heuristics would thus be determined by what the individual wants from the work place and the opportunities and constraints that he discerns in his work environment. A study of heuristics thus implies an investigation into some aspect and part of the 'goals-means' chain. The specific aspect investigated and the reasons for anchoring the study on that aspect are now discussed.

The starting point of the research reported in this chapter is job holder's 'success' in his job. Both the job holder and the organisation would equally agree that this is a desirable criterion: success for the job holder would indicate the measure of satisfaction he derives from the job; equally, job holder success in the job would indicate, for the organisation, the satisfactoriness of the man-job combination.

The three essential purposes for the research reported herein are derived from the following considerations.

Given that work forms the bond between the individual and the organisation,

1. The major area of concern to job designers should be what job holders themselves hold to be the predeterminants of success in job.
2. A related area of concern for job designers would be the outcome variables (post determined) associated with success in job.

This concern would however be of a different nature than that associated with the foregoing.

Given that most organisations continue to use monetary rewards as

incentive:

3. Job holders are likely to place the highest importance on salary and benefits themselves, or evidence that these items are the outcomes of events (in the goals means chain) on which they place higher importance than they do theron.

Note that, of the three statements given above, while the first two indicate exploratory research, the third is a hypothesis.

The way the exploratory part of the research was operationalised and how the stated hypothesis helped in progressing the study is explained in the main body of the chapter. This chapter consists of the following sections:

10.1 Prelude
10.2 The research instrument
10.3 The concepts - an explanation of concepts derived from graph theory
10.4 The field study
10.5 Analysis of data-main study
10.6 Saliency of salary and benefits
10.7 Conclusions

10.1. Prelude

The source material on how a person relates to his work is job attitudes. Job attitudes have been extensively investigated and reported in literature (see Chapter 2). The value of investigation into job attitudes lies in the ability to relate the job attitudes held by a person to his performance. However, whereas the earlier researchers assumed that "good" job attitudes automatically led to good performance, it has for some time been research established that this, per se, may not be the case (see Kornhauser and Sharp (1932)).

According to Locke (1976) the primitives with respect to which job attitudes have been most often studied are the following nine:

1. Work
2. Pay
3. Promotion
4. Recognition
5. Benefits
6. Working conditions
7. Supervision
8. Co-workers
9. Company management

McClelland (1961) suggested that money also acts as a mark of achievement, as the indicator of recognition and as a lubrication for attaining other values/needs like leisure, works of art, etc. Thus on the authority of McClelland it could be said that even in this short list of 9 items, some are linked in the means/goals chain.

Studies on job attitudes and specific primitives investigated or inferred from the data have been discussed in Chapter 2. The particular job attitudes studies regarded by the author to be important in the context of this chapter are two reported by Herzberg and his collaborators (Herzberg et al (1959), Herzberg et al (1957)). While the importance of the Herzberg (1959) study lies in that it begat the Herzbergian job design paradigm, the earlier report, forming a comprehensive review of the subject, underpinned the later findings.

The above narrated centrality of Herzberg's findings to job design theory, plus the fact that the 10 constructs delineated by him could be operationally verbalised in a way that would lend themselves to building of means/goals chains, recommended their use in the heuristics study. Additional reasons which

led to the focus on Herzbergian constructs were:

1. While criticism of the novel way in which Herzberg dealt with salary are many, all these stem from theoretical reasoning. To support this contention is the following quotation from Campbell and Pritchard (1976):

> "Unfortunately, rather than going on to explore systematically the potential of the free response procedure, the same procedure has been repeated over and over. For taxonomic purposes, it would have been more fruitful to explore the effect of systematic change in certain parameters, such as the nature of the episode to be described, the time frame of the collection, the mode of data collection (e.g. oral versus written), types of job, alternative procedures for the content analysis, etc. If this had been done, we would now have a much more complete picture of what people consider to be important outcomes of work".

The author's study was designed to investigate 'what leads to what', i.e. the heuristics, through the potential of new interpretation rather than to support or to repudiate those originally arrived at by Herzberg and his collaborators.

2. The possibility of relating the findings to a body of literature bearing on job design so that the concepts of antecedents and postcedents that the author was attempting to develop would have immediate utility to job design.

3. The possibility of building on some known research findings.

Herzberg's constructs and their operationalisation

Herzberg (1959) himself and subsequent researchers making references to Herzberg's work, e.g. Campbell et al (1960), often use short construct names which are given meaning and body within the text. However, without the accompanying text, the author regarded the titles assigned as interpretable in a number of ways. In an attempt to reduce the multiplicity of interpretations, the author operationalised the constructs with descriptive statements/phrases. The original Herzberg constructs and the assigned descriptive expressions are presented in the table of Figure 10.1.

Herzberg construct	Expression used in current study
1. Achievement	The success I have in doing my job.
2. Recognition	The recognition I receive for the work I do.
3. Work itself	The nature of the work I carry out.
4. Responsibility and authority	The control I have over my own and other's work.
5. Work conditions	The conditions prevalent at work (physical conditions and facilities)
6. Interpersonal relationships	The relationships I have with the boss and colleagues.
7. Salary and benefits	The salary and benefits I earn.
8. Supervision - technical	The technical competence of the boss and colleagues.
9. Advancement	The advancement I get through promotions.
10. The policies and administration	The policies and administration of the organisation I work for.

Figure 10.1: Operationalisation of Herzberg's factors

These operationalised expressions were used in the study. How these were used will be explained in the next section. This chapter reports a study based on these 10 constructs; in the report, the numbers used in the above listing will act as reference numbers to these constructs. For example, the phrase 'construct 4' will imply 'responsibility and authority'.

10.2. The research instrument

The study was conducted through a form of questionnaire . The development of the instrument took place in three steps. The final version of the research instrument has only 3 pages and the three pages after this page are in fact the research instrument itself. The steps in the development of the research instrument and the final form in which it was used will now be described. In reading this description, consulting the final form of the questionnaire may be found helpful.

The development

The developmental phase is shown diagrammatically in Figure 10.9.

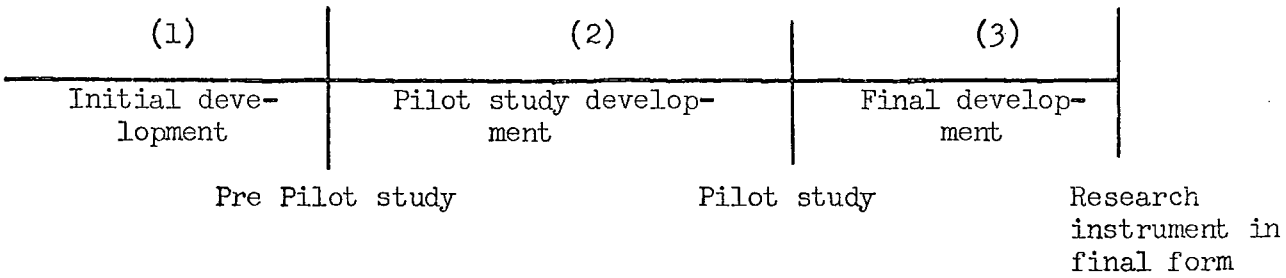


Figure 10.2: The steps in the development of the Heuristic study research instrument

10.2.1. The pre-pilot study was conducted with three faculty members of the Business School. One of these participants suggested the use of the word 'influence' instead of 'predetermine'. The former word he thought might not be understood by respondents from industry. However, in the discussion with the other two persons it was clear that the meaning they assigned to 'pre-determine' was different from that which they would ascribe to the word 'influence'. It was certainly the case that the concept the author wanted to research required the use of the word 'pre-determine'. It was therefore decided to retain the word, and pay particular attention during the pilot study to check to see whether there was any incomprehension or misinterpretation of the word.

10.2.2. The pilot study was conducted with 23 managerial level personnel from different fields. The results from these respondents were clearly indicative of satisfactory understanding of the research instrument. Indeed, none of the

Dear research participant,

Enclosed is a questionnaire on job holders views on his/her job.

I would be grateful if you would complete the questionnaire and return it to me at the address given below:

M. J. Chaudri,
Durham University Business School,
Mill Hill Lane,
Durham, DH1 3LB.

For any queries that may arise, please telephone,
Jim Chaudri on Durham (0385) 41919 ext.59

****

Age:
i. Less than 26 years of age .....
ii. Between 26 and 30 years of age .....
iii. Between 31 and 35 years of age .....
iv. Between 36 and 40 years of age .....
v. Between 41 and 50 years of age .....
vi. Between 51 and 65 years of age .....
vii. More than 65 years of age .....

Sex:
i. Male .....
ii. Female .....

Job grade (in terms of the hierarchical level of the position you are occupying):

i. Top management .....
ii. Senior management .....
iii. Middle management .....
iv. Junior management .....
v. Entry level management .....
vi. Others, please specify: _____

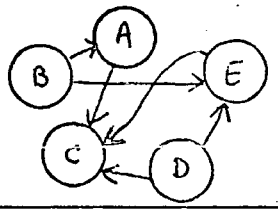
Marital status:
i. Married .....
ii. Unmarried .....
iii. Widowed .....
iv. Separated .....

Number of children:
i. None .....
ii. 1 to 2 .....
iii. 3 to 4 .....
iv. More than 4 .....

Document MJC/79/5

On the accompanying clock-face diagram are ten circles. Each circle contains a statement reflecting some conditions associated with, and related to, the work environment. Please draw arrows between the circles to indicate which condition pre-determines which other.

Example: On a five circle diagram the arrows could be drawn as shown below:



Note: If an arrow is drawn from A to C, do not draw one from C to A. Please feel free to draw as many arrows as you think appropriate.

The success I have in doing my job

The recognition I receive for the work I do

The working conditions prevalent at work. physical conds & facilities

The nature of the work I carry out

The relationship I have with the boss

The control I have over my own and other's work

The salary and benefits I earn

The advancement I get through promotions

The technical competence of my boss and colleagues

The policies and administration of the organization I work for.

Given below, in a list form are the ten statements from the preceding page. Please grade, on a scale 1 to 3 the importance you place on each item.

Grade 1 indicates the highest importance; grade 3 the least importance.

Statement of job situation	Grade
1. The success I have in doing my job	
2. The recognition I receive for the work I do	
3. The nature of the work I do (job contents)	
4. The control I have over my own and other's work	
5. The working conditions prevalent at work, physical conditions and facilities	
6. The relationship I have with my boss	
7. The salary and benefits I earn	
8. The technical competence of my boss and colleagues	
9. The advancement I get through promotions	
10. The policies and administration of the organisation employing me	

Think of the time you were happiest in your job situation (in the current job or in any previously held position) and also think of the time you were unhappiest.

In column B tick the statements which would describe the causes of your happiest experience.

In column C tick the statements which would describe the causes of your unhappiest experience.

A Statements of job situation	B Happiest	C Unhappiest
1. The success I had in doing my job		
2. The recognition I received for the work I did		
3. The nature of the work I was involved in		
4. The control I had over my own and other's work		
5. The working conditions prevalent at work, physical conditions and facilities		
6. The relationship I had with my boss		
7. The salaries and benefits I earned		
8. The technical competence of my boss and colleagues		
9. The advancements I got through promotions		
10. The policies and administration of the organisation employing me		

pilot study participants, when asked after having completed the questionnaire, could suggest any way in which the questionnaire needed to be modified, clarified or improved.

The pilot study did have one beneficial result for the researcher, however, in that one of the subjects responded to the first question on page 3 by marking only three items instead of the whole list, on a scale 1 to 3. To reinforce the requirements expressed in this question it was decided to underline the word "each" in the question concerned.

10.2.3. The final form

The first page of the research instrument contained 5 questions for eliciting demographic data on the respondents. The importance of type of data, for the study at hand, has been discussed earlier in Chapters 2, 4, 6 and 7. This information can be used for finer analysis of the individual heuristics, i.e. do males have different heuristics from females? Do younger people have different heuristics from more mature (in years) people? Whether the heuristics are a function of the hierarchical level of the respondents? or even whether the civil status (marriage and children) produces differences in heuristics. However, the author's purpose in collecting this data for report in this chapter was essentially to check for gross biases in the source of the heuristics data, i.e. the respondent population.

The second page of the research instrument contained a 'clock face diagram'. Herzberg's ten constructs, operationally verbalised, were written, equally spaced out, along the circumference of a circle. Around each of the statements, in turn, a small circle was drawn. The space inside the circle, along whose circumference the statements were positioned, was left blank.

The respondents were given specific instructions on what to do (see second page of research instrument); moreover, to add clarity to the instruction a smaller example was presented. A note was added to prevent the drawing of two-way arrows.

The respondents were asked to draw arrows to show which conditions predetermine which other .

The third page of the research instrument contained two questions; the responses to the first of which were necessary for the computation of heuristic pressures, the second question intended to facilitate comparison with the original Herzberg study.

The first question on the third page asked the respondents to grade, according to the importance they attached, all the 10 operationally defined Herzberg constructs, on a scale 1 to 3, where grade 1 indicated highest and grade 3 the least, importance.

The last question on page 3, and for the study as a whole, asked the respondents to think of the time they had experienced their greatest happiness and the time they had experienced the greatest unhappiness. The respondents were asked to tick those of the operationally defined Herzberg constructs that were involved on these occasions. Note that the response space consisted of two columns: one for the description of the happy occasion and the other for the description of the unhappy occasion.

The research instrument having been discussed, some important concepts developed in the course, and for the purpose of analysing heuristics will now be presented, in the next section. The basic concepts were developed, and translated to this study, from literature on Graph Theory (see, for example, Berge (1966/1962), Ore (1963)). Of specific and focal interest is the theory of Directed Graphs.

10.3. The Concepts

The concepts associated with heuristics are alluded to, or can be inferentially derived from current literature on motivation; but, to date, there is no study report on research into heuristics of job environment that the author is aware of. This fact necessitated the development of some concepts that will now be defined. In the definition of concepts although the term 'work situation' may not always be stated, it will in fact be implied. Moreover, effort is not as much being made to rigorously define the concepts as to convey the concepts to the reader, in order to enable him to follow the study, understand the data and evaluate the interpretations.

In the study itself the primitives used are those operationalised from Herzberg, but in the statements on concepts, and examples contrived for the clarification of these the term 'construct' has been used in order both to make the concepts more general and to prevent the reader making inferences as to the author's view of the underlying relationships between the Herzbergian constructs.

However, although attempt has been made to present the concepts in a general form, this has only been done to a degree: where complete generalisation might have called for defining the specific-to-study interpretation, generalisation has not been carried through.

Lastly, this section is in two parts. In the first part, where the basic concepts are presented one after the other, the reader, some way through, may well ask 'What is all this in aid of?'. Well, the concepts are used in the study and therefore necessary for understanding it. All that can be said is to ask the reader to persevere a little and in the course of the second part which extends the basic concepts but uses the pilot study data for illustrations, the whole study will become clear.

10.3.1. The basic concepts

In this subsection, 7 concepts are discussed. Some of these concepts are borrowed from Graph Theory and the diagrammatic approach lends itself to conveying these concepts. Some of the concepts discussed here are not directly related to Heuristics but need discussion because the method of Heuristics, developed by the author, uses these Graph Theory concepts.

(i) Predetermination and its representation

The notion signifies one construct (denoting an event or condition) leading to another. It indicates that the fulfilment of the preceding condition, or event, in some way leads to the fulfilment of the construct predetermined by it. The preceding event or condition may thus be necessary but may not be, on its own, sufficient.

Taking the graphical approach, two constructs, A and B, having a predetermining relationship between them, are shown in the diagrams of Figure 10.3. In the representation the constructs are depicted by circles (with the reference number of the construct written within it) and the relationship is shown by the arrow, which goes from predetermining construct to the one pre-determined.

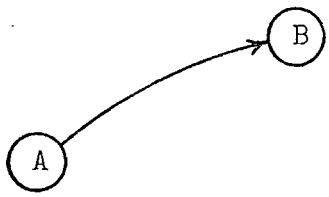


Diagram 1: Construct A predetermines Construct B

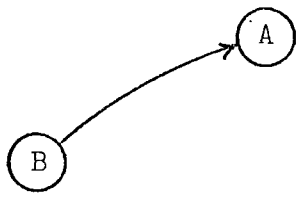


Diagram 2: Construct B predetermines Construct A

Figure 10.3: Diagrammatic representation of the predetermining relationships

The circle signifying the construct is referred to as the Node. Thus, in a graphical representation a node represents a construct. The nodes derive their references from the construct that they represent: Construct A is represented by node A, and Construct B by node B.

In discussions of predetermining relationships where graphically methods have been used, the terms Node A or Construct A may thus be interchangeably used.

A construct may predetermine two, or more, constructs and one construct may be predetermined by two or more constructs, i.e.between several constructs the relationships may be of the types one-to-many or many-to-one respectively.

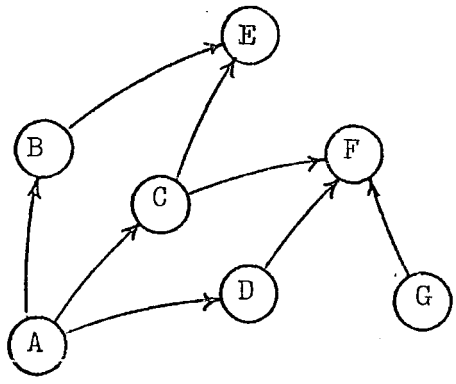


Figure 10.4: Illustration of 'one-to-many' and 'many-to-one' relationships; also shows 'direct' and 'indirect' predetermination

These two types of relationships are illustrated in Figure 10.4 where:

(a) One-to-many predetermining relationships hold for Constructs A and C on account of: A predetermining the three nodes B, C and D; C predetermining the two nodes E and F.

(b) Many-to-one predetermining relationships held for Constructs E and F, on account of: node E being predetermined by nodes B and C; node F being predetermined by nodes C, D and G.

In Figure 10.4 nodes A and G are themselves not predetermined by any other nodes and nodes E and F do not predetermine other nodes. Such nodes as these are referred to as the Terminal Nodes. Where a distinction is necessary as to which of the two types i.e. of the type A and G or of the type E and F, a particular terminal node is, the following convention will be used:

(a) Those terminal nodes predetermining others will be referred to as the starting terminals

(b) Those terminal nodes not predetermining others will be referred to as the end terminals

(ii) Direct and indirect predetermination - chains

The statement 'Construct A predetermines Construct B' shows direct dependence between the two constructs. Such a relationship is referred to as the Direct predetermination . With reference to Figure 10.4, node E is directly predetermined by node B and node B is, in turn, directly predetermined by node A. Although nodes A and E are not directly involved in any predetermining relationship, the fact that the node A predetermines node B which in turn predetermines

node E, suggests that A and E are involved in some indirect predetermining relationship. The relationships of the type between nodes A and E, where the bond is through intermediary nodes, will be referred to as 'Indirect predetermination'. Although in the figure being referenced the diagram shows only one intermediary node between A and E, the number of nodes acting as intermediaries may be any for indirect predetermination. When the indirect predetermination is one removed, i.e. involves one intermediary, it will be referred to as level 1 indirect predetermination; when the number of intermediaries involved in indirect predetermining relationships is 2, 3, 4 etc., these will be referred to as level 2, level 3, etc. indirect predeterminations.

Constructs which are themselves not directly related but are so through intermediaries will also be referred to as chain linked . Thus the path tracing predetermining relations, through intermediary nodes, constitutes the chain

(iii) Heuristic maps

Diagrams of the type shown in Figure 10.4 will be referred to as 'graphs'. Graphs, in the context of studies in heuristics, with the added proviso that between the starting-terminals and end-terminal there be 'conceptual closure' are regarded as forming 'heuristic maps'. Constructs linked in predetermining relationships are said to possess conceptual closure when no relevant predetermining relationships hold either beyond the end-terminal or prior to the starting terminal. The concept of closure leads to the distinction between two types of heuristic maps arising from the way of constructing them. The two ways of building heuristic maps are as follows:

(a) Seeded heuristic maps

The construction of the seeded form of the heuristic map demands the delineation of some event or condition with respect to which through the successive positing of questions such as "What will this lead to" and "What events or conditions are necessary for its fulfilment" the map is built, in either direction, from the seeding concept. Note that conceptual closure is built in - the questions are stopped each time the discussion goes out of the closure limit.

(b) Jointed heuristic maps

The construction of the jointed form of the heuristic map is based on presenting a list of constructs to individuals and asking them to link the constructs with any, and all, the predetermining relationships they perceive to hold between the given constructs. Note that in jointed heuristic maps, conceptual closure is based on a priori reasoning. The study reported in this chapter is based on jointed heuristic maps.

(iv) Sub-maps and sub-chains

Heuristic maps as explained above have a conceptual closure, and the nodes so derived cover the whole conceptual area. If attention is subsequently focussed upon some particular aspect of that conceptual area only certain nodes will be of interest. The nodes of interest at any one time (and the relationships between them) constitute a sub-map; and the predetermining relationship paths, which may otherwise extend to beyond the sub-map, constitute sub-chains.

Thus the difference between maps and sub-maps arises from the conceptual area covered: in sub-maps the conceptual closure relates to some specific aspect of the 'whole' which has been mapped earlier.

(v) Static pressure

The importance an individual places on, or attaches to, a construct is the static pressure for that individual on the event or condition denoted by the construct. The concept becomes clearer and is more useful in a comparative sense, i.e. when the static pressure on two or more constructs are simultaneously rather than for single constructs, available from the same source. An example could be formed from the data published by Jurgensen (1978) discussed in Chapter 2. Note that whereas the above stated definition uses the word 'importance', in the collection of data published by Jurgensen the word used was 'preference'. Hence the use of the phrase 'forming an example'. The table of Figure 10.5 presents data on the preferences attached, by Wowen, over a 30 year period to 10 constructs.

The author regards that the term 'preference ascribed' and 'importance attached' would, in this instance, lead to the same interpretation for this data.

Construct	Graded Degree of importance/ Grade of preference	
	Own self	Ascribed to others
Benefits	1	5
Hours	2	7
Working conditions	3	4
Pay	4	10
Supervisor	(5.5	3
Advancement	(5.5	8
Co-workers	7	1
Security	8	6
Company	9	2
Type of work	10	9

Figure 10.5: Explaining the term static pressure with data from Jurgensen (1978)

For the reader who accepts the author's suggestion, this would be a real data example. For the reader who regards the concepts 'importance' and 'preferences' as too divergent even for the suggested interpretation, this is a contrived example to show how static pressure may be viewed in a way similar to that of preference.

Nevertheless, the term static pressure as defined above, may appear to be an unnecessary complication - if it is the same as importance, why introduce new concepts? The importance of this term, however, lies in that it serves as a building block for the concept to be discussed next - heuristic pressure.

(vi) Heuristic pressure

Heuristic pressures are calculated, from static pressures, for constructs linked to each other in predetermining relationships, and thereby forming heuristic maps. For example consider the situation depicted in Figure 10.6, where three constructs, A, B and C are linked in predetermining relationships between C and B, and B and A. In this diagram the construct labels are given in the upper portion of the nodes representing them. In the bottom portion of each node is given the importance attached to the construct represented by the node.

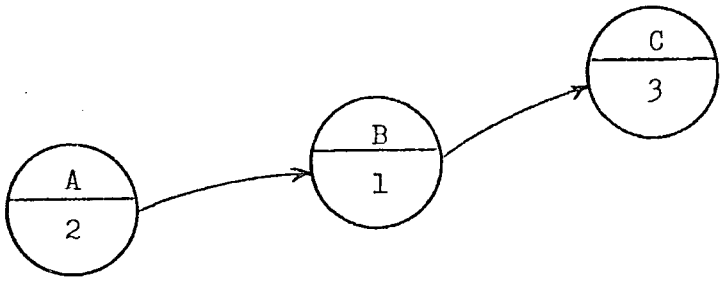


Figure 10.6: Diagram for explaining the concept Heuristic pressure

Thus constructs A, B and C have importances, or static pressures, of 2, 1 and 3 respectively.

The heuristic pressure on a construct is the sum of the static pressure on that construct plus the static pressures on all the constructs on the chain predetermining it.

Thus the heuristic pressure on node B is 3 and on node C it is 6.

As a concept heuristic pressure, then, stands for the importance that becomes attached to constructs as a consequence of taking into consideration the attributed predetermining relationships between the constructs and the static importances attached thereto.

(vii) Static product, consequential product and related notions

From the explanation of the concept of heuristic pressure it follows that nodes positioned higher up in the heuristic map would acquire higher values of heuristic pressure than nodes occurring lower down in the chain. This happens even when the predetermining nodes have the higher static pressure. To be able to differentiate between the nodes having high pressure solely on account of their position and those having intrinsically (statically) higher pressure, the concepts of static product and consequential product were developed. As a result of the development of these concepts, certain other concepts useful in discussions on relative heuristic pressures will now be presented and explained.

The understanding required, and something that was left implicit in the discussions so far, is that static pressure is what subjects (individuals) assign, or attribute, to the constructs. And this assignment, in the context of several constructs being assigned at the same time, is relatively done. By this is

meant that the person attributing importances does so for, say, N constructs using some relative scoring system, say, a scale 1 to 3, or a scale 1 to 10. Whatever the scoring system adopted, for assigning importances, the focal thing about it is that although knowledge of the particular system used is not necessary for computing heuristic pressures, this knowledge is required on occasions which call for differentions of the type that the concepts of static and consequential product were developed to facilitate.

Static product. A construct will be referred to as a static product if it is attributed the highest importance on the scoring system used, whichever that might be.

Consequential product. A construct that acquires values of heuristic pressure equal to or greater than the highest measure on the system employed in assigning static pressures will be referred to as the consequential product.

Other notions useful in discussions on the above explained concepts are: pre-product and by-product.

The notion of pre-product is based exclusively on the relationship of predetermination. When a construct pre-determines another construct, the predetermining construct may, in discussions centred on static and consequential products be referred to as the pre-product of the construct it predetermines.

When two constructs are involved in a relationship of direct or indirect predetermination and the construct denoted by the node positioned lower in the chain has the higher static pressure attributed to it (relative to the node higher up the chain) then the construct represented by the upper positioned node may be referred to as the by-product of the predetermining construct.

Whereas the notion of by-product indicates that the predetermining construct has a lower static pressure (compared with the construct that it predetermines) when the pair of constructs being discussed have the same static pressure loading, then the predetermined construct, i.e. that represented by the node placed higher in the chain, may be referred to as the concomitant product.

The above discussed concepts are graphically depicted in the 4 diagrams of Figure 10.7. These diagrams depict the predetermining relationship of

construct A (node A) to construct B (node B), i.e. A predetermines B. As a consequence of this relationship, in each case construct A would be the pre-product. The other concepts are illustrated by assigning different importance, on a scale 1 to 3, to the two constructs.

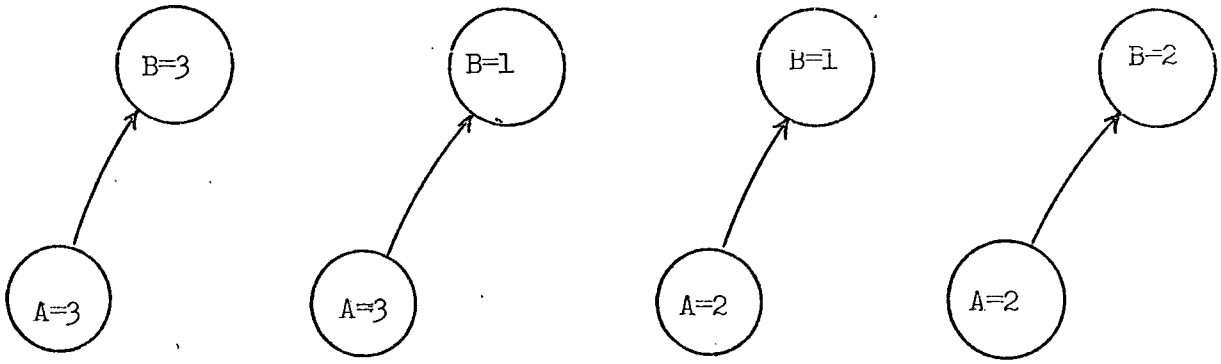


Diagram 1: A and B both static products

Diagram 2: B = consequential product

Diagram 3: B = By Product

Diagram 4: B = Concomitant Product

Figure 10.7: Illustration to explain the 'product' concepts

Note: In diagrams 3 and 4, B is also a consequential product.

The concepts explained under the above seven headings are the basic ones developed in the course of collating and analysing data collected for, and in, the study being reported. The mechanics of data analysis necessitated developments further and in addition to these. These other concepts will now be discussed with the help of data collected in the pilot study. The next eleven pages, in fact, present the heuristic maps from the 21 pilot study participants. The reader is requested to browse through these graphs now, although the explanations on them will be through references in the material presented in the following subsection.

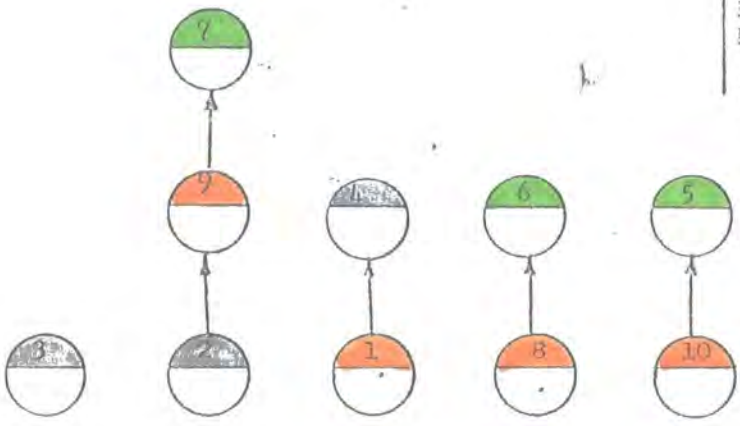
To reiterate, the two concepts basic to the derivation of heuristic pressures are:

1. The importance placed by the respondents on the constructs.
2. The connectivity, as defined by the respondents, between the constructs.

In the heuristic maps on the next eleven pages

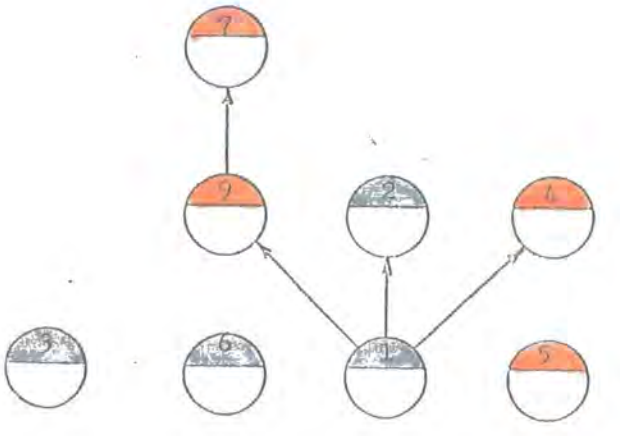
1. The nodes carry the reference number of the construct they represent in the top part.

Case 1



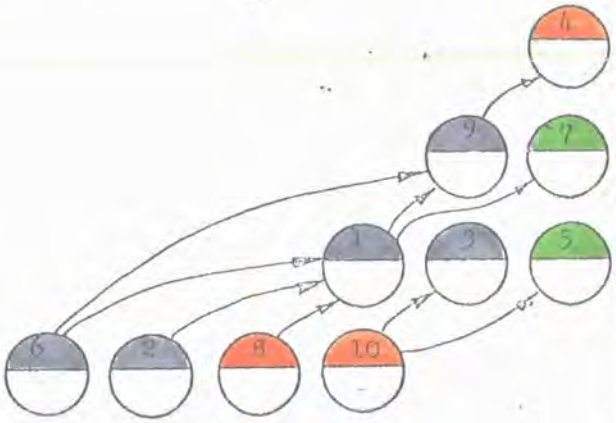
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	20	20	
1	2	2	8,9,10
2	3	3	4,5,6,7
3	3	3	4,5,6,7
4	3	5	2,3
5	1	3	4,5,6,7
6	1	3	4,5,6,7
7	1	6	1
8	2	2	8,9,10
9	2	5	2,3
10	2	2	8,9,10

Case 2



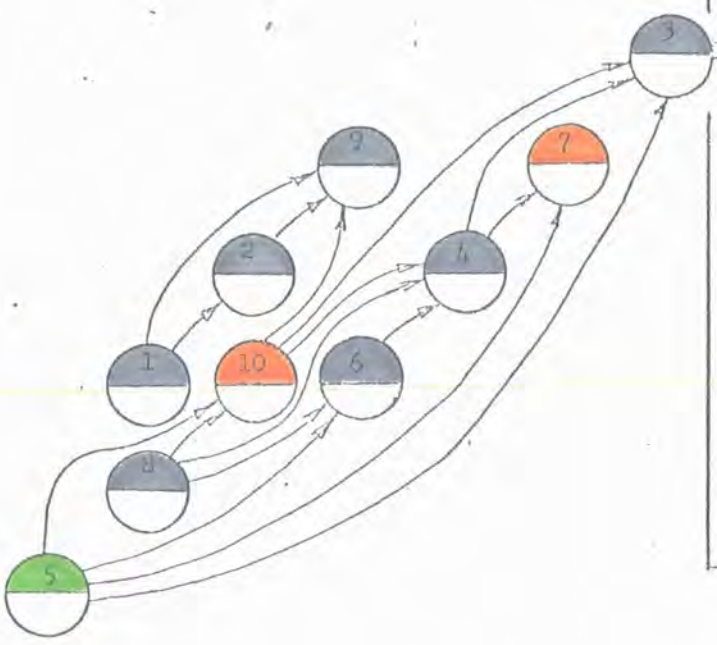
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	23	23	
1	3	3	3,4,5,6,7,8
2	3	4	2
3	3	3	3,4,5,6,7,8
4	2	3	3,4,5,6,7,8
5	2	2	9,10
6	3	3	3,4,5,6,7,8
7	2	5	1
8	2	2	9, 10
9	2	3	3,4,5,6,7,8
10	1	3	3,4,5,6,7,8

Case 3



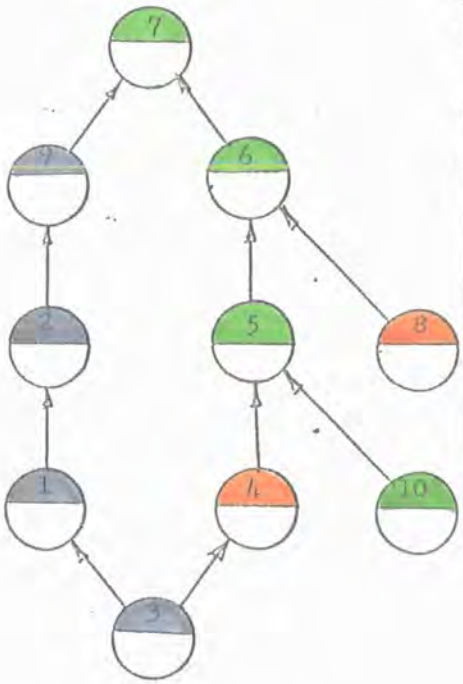
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	23	92	
1	3	38	2
2	3	12	6,7
3	3	16	5
4	2	45	1
5	1	8	8,9,10
6	3	12	6,7
7	1	23	4
8	2	8	8,9,10
9	3	37	3
10	2	8	8,9,10

Case 4



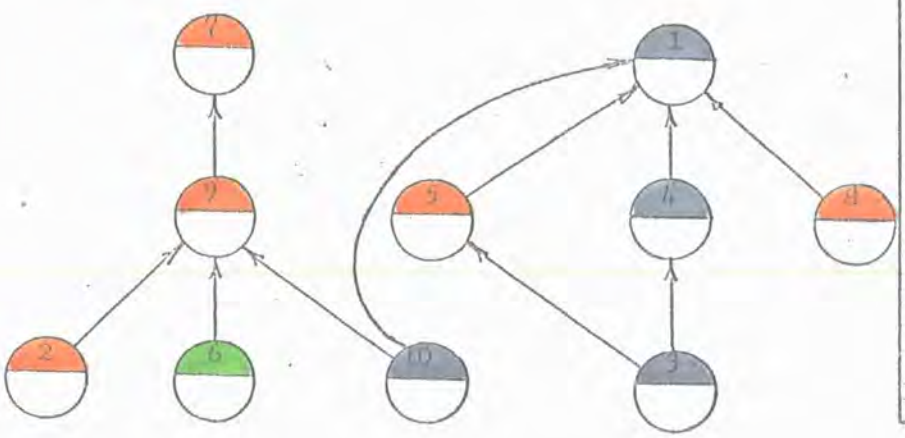
Construct No.	Static Pressure	Heuristic pressure	Rank of Heuristics
	26	312	
1	3	36	8,9
2	3	54	5
3	3	108	3
4	3	112	2
5	1	12	10
6	3	51	6
7	2	83	4
8	3	36	8,9
9	3	121	1
10	2	39	7

Case 5



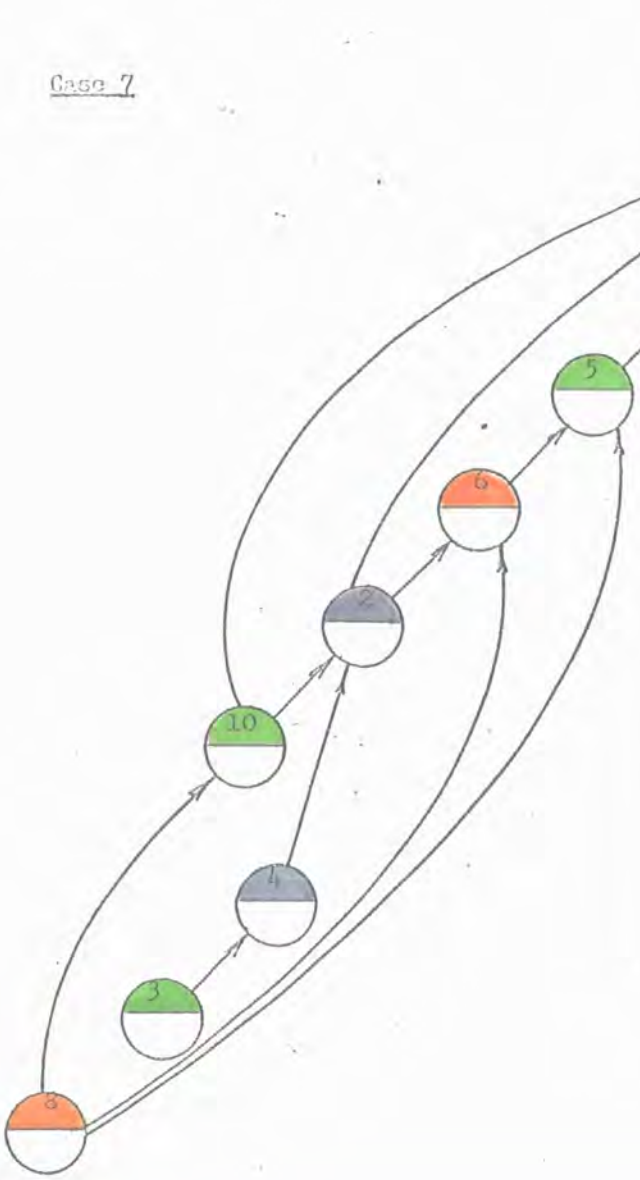
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	40	40	
9	6	9	6
2	6	15	4
3	6	6	8
4	4	7	7
5	2	10	5
6	2	17	3
7	2	40	1
8	4	5	9
9	6	21	2
10	2	2	10

Case 6



CN	SP	HP	Rank of heuristics
1	6	29	1
2	4	4	8,9
3	6	6	6,7
4	6	9	4
5	4	7	5
6	2	2	10
7	4	17	2
8	4	4	8,9
9	4	13	3
10	6	6	6,7

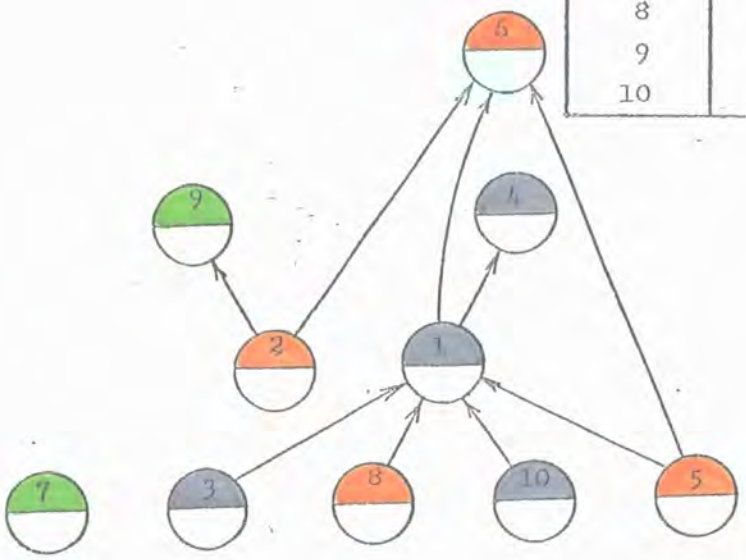
Case 7



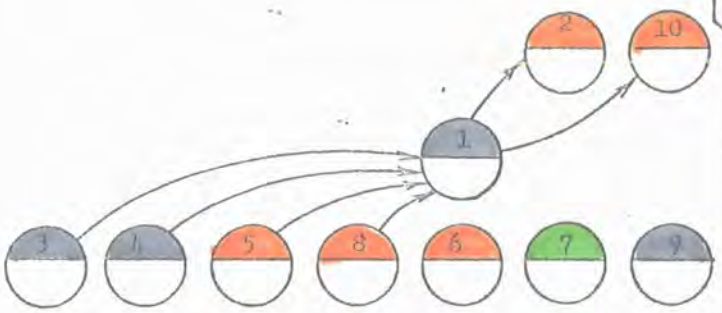
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	22	264	
1	3	131	3
2	3	102	4
3	1	12	10
4	3	48	7
5	1	95	5
6	2	75	6
7	3	264	1
8	2	24	8
9	3	228	2
10	1	20	9

Case 8

Constraint number	Static pressure	Heuristic pressure	Rank of heuristics
	22	22	
1	3	12	1
2	2	2	6,7,8,9
3	3	3	4,5
4	3	9	3
5	2	2	6,7,8,9
6	2	10	2
7	1	1	10
8	2	2	6,7,8,9
9	1	2	6,7,8,9
10	3	3	4,5

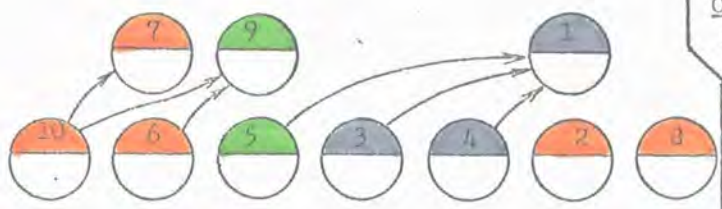


Case 9



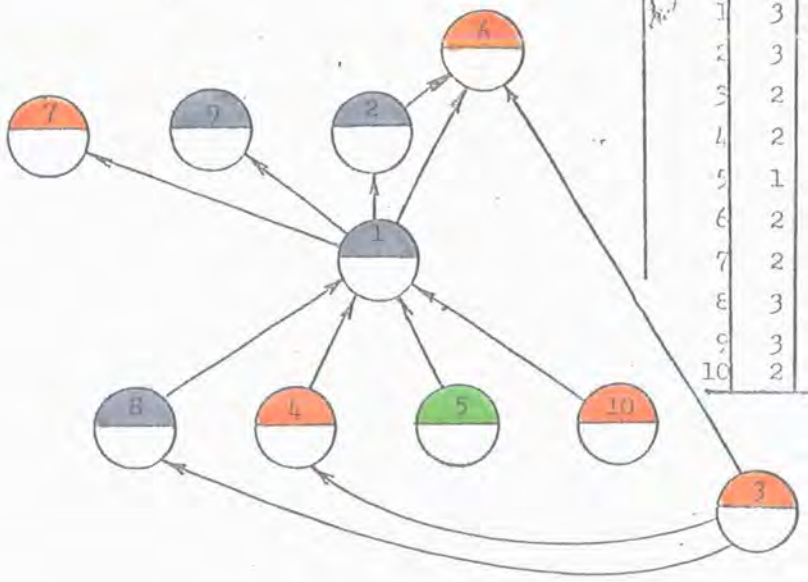
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	23	46	
1	3	26	1
2	2	17	2,3
3	3	6	4,5,6
4	3	6	4,5,6
5	2	4	7,8,9
6	2	4	7,8,9
7	1	2	10
8	2	4	7,8,9
9	3	6	4,5,6
10	2	17	2,3

Case 10



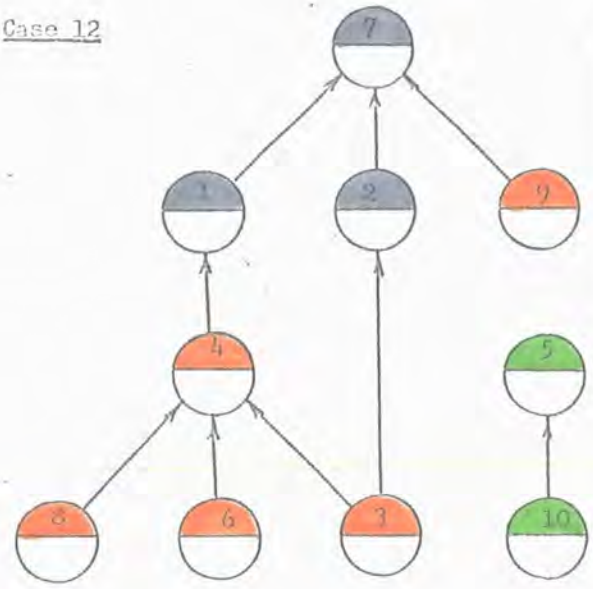
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	21	21	
1	3	10	1
2	2	2	6,7,8,9
3	3	3	3,4,5
4	3	3	3,4,5
5	1	1	10
6	2	2	6,7,8,9
7	2	3	3,4,5
8	2	2	6,7,8,9
9	1	4	2
10	2	2	6,7,8,9

Case 11



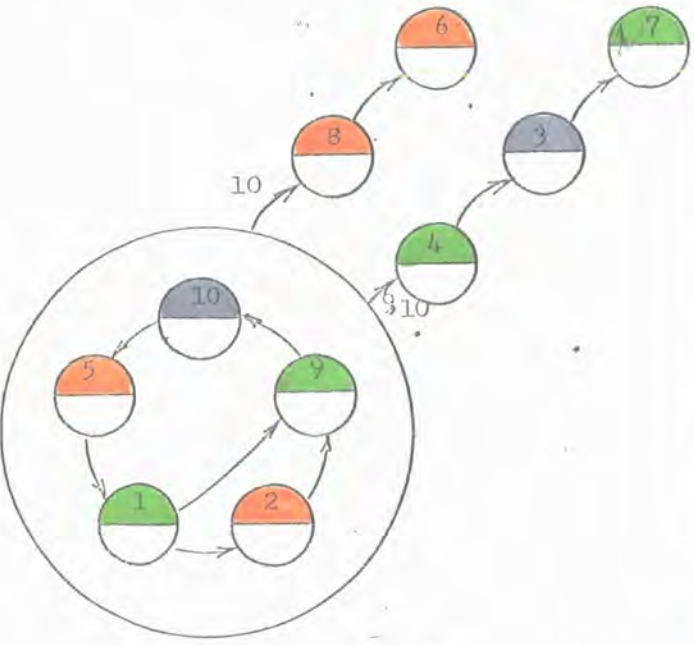
Con-struct No.	Static pressure	Heuristic pressure	Rank of heuristics
	23	276	
1	3	148	1
2	3	73	3,4
3	2	24	8,9
4	2	32	7
5	1	12	10
6	2	142	2
7	2	61	5
8	3	44	6
9	3	73	3,4
10	2	24	8,9

Case 12



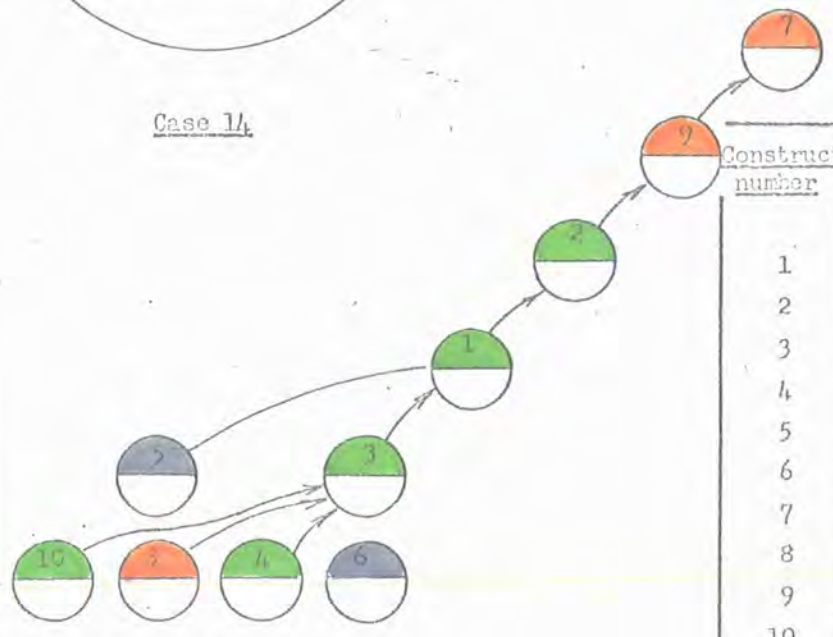
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	21	21	
1	3	10	2
2	3	4	4
3	2	2	5,6,7,8,9
4	2	7	3
5	1	2	5,6,7,8,9
6	2	2	5,6,7,8,9
7	3	19	1
8	2	2	5,6,7,8,9
9	2	2	5,6,7,8,9
10	1	1	10

Case 13



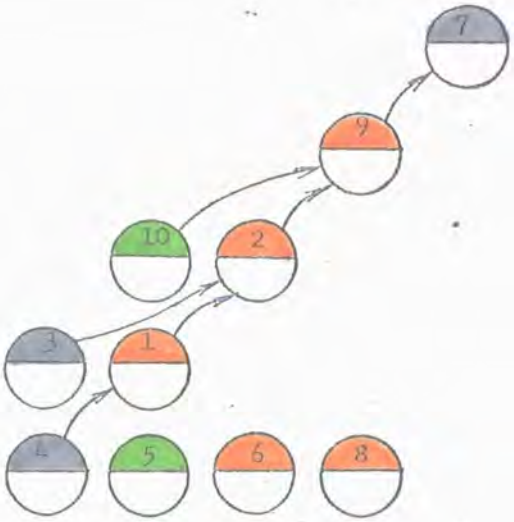
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	18	18	
1	1	1	9,10
2	2	2	7,8
3	3	10	2
4	1	7	3,4
5	2	2	7,8
6	2	7	3,4
7	1	11	1
8	2	5	5
9	1	1	9,10
10	3	3	6

Case 14



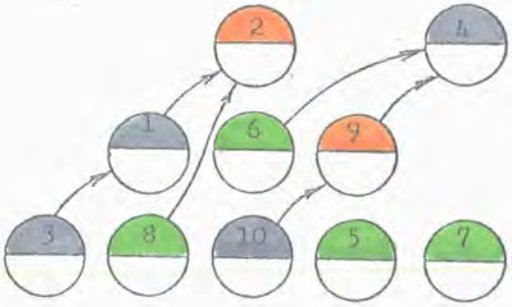
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	17	17	
1	1	9	4
2	1	10	3
3	1	5	5
4	1	1	9,10
5	3	3	6,7
6	3	3	6,7
7	2	14	1
8	2	2	8
9	2	12	2
10	1	1	9,10

Case 15



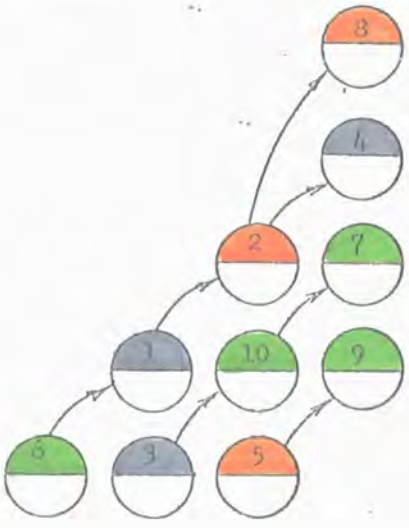
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	21	42	
1	2	10	4
2	2	17	3
3	3	6	5, 6
4	3	6	5, 6
5	1	2	9, 10
6	2	4	7, 8
7	3	32	1
8	2	4	7, 8
9	2	26	2
10	1	2	9, 10

Case 16



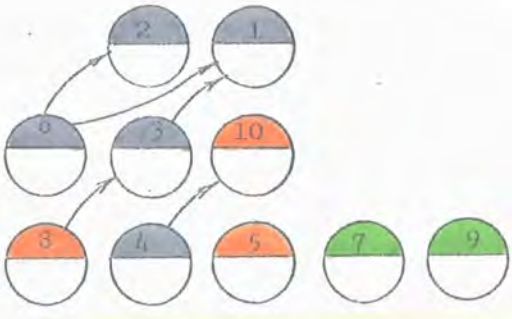
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	21	21	
1	3	6	3
2	2	9	1,2
3	3	3	5,6
4	3	9	1,2
5	1	1	7,8,9,10
6	1	1	7,8,9,10
7	1	1	7,8,9,10
8	1	1	7,8,9,10
9	2	5	4
10	3	3	5,6

Case 17



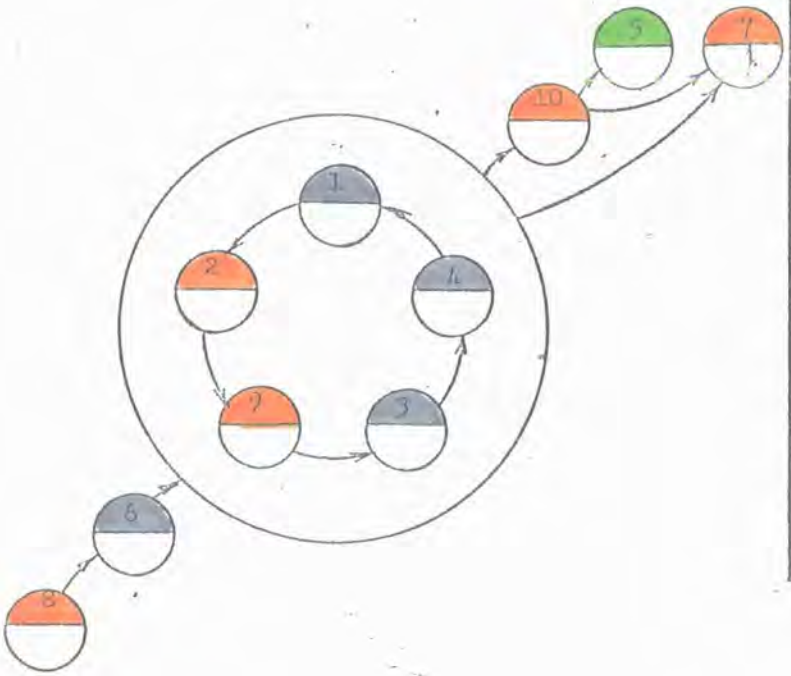
Construct number	Static Pressure	Heuristic pressure	Rank of heuristics
	19	19	
1	3	4	5,6
2	2	6	1,2
3	3	3	7,8
4	3	6	1,2
5	2	2	9
6	1	1	10
7	1	5	3,4
8	2	5	3,4
9	1	3	7,8
10	1	4	5,6

Case 18



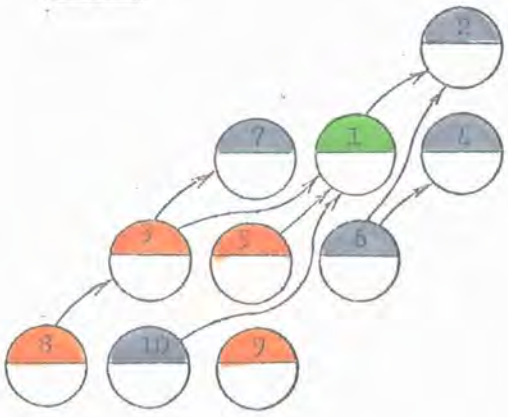
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	23	46	
1	3	19	1
2	3	9	4
3	3	10	2,3
4	3	6	5,6
5	2	4	7,8
6	3	6	5,6
7	1	2	9,10
8	2	4	7,8
9	1	2	9,10
10	2	10	2,3

Case 19



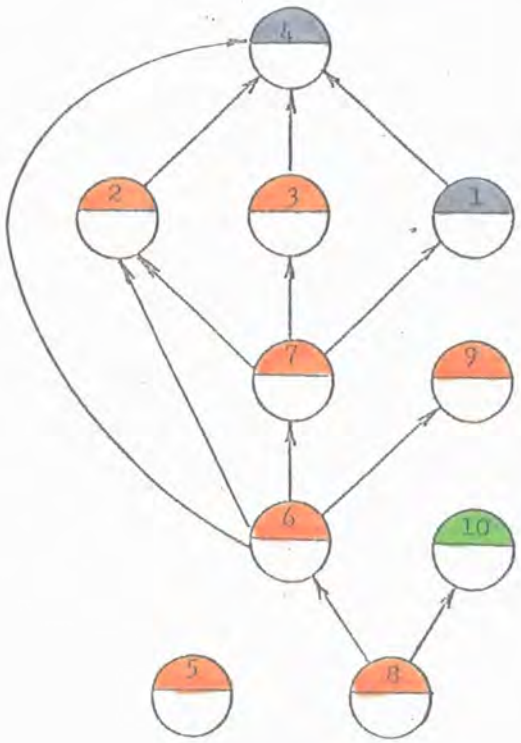
Construct number	Static pressure	Heuristic pressure	Rank of heuristic
	23	230	
1	3	36	5,6,7,8,9
2	2	36	5,6,7,8,9
3	3	36	5,6,7,8,9
4	3	36	5,6,7,8,9
5	1	65	3
6	3	50	4
7	2	165	1
8	2	20	5,6,7,8,9
9	2	36	10
10	2	110	2

Case 20



Construct number	Static Pressure	Heuristic pressure	Rank of heuristics
	24	48	
1	1	16	2
2	3	25	1
3	2	8	5
4	3	9	4
5	2	4	8,9,10
6	3	6	6,7
7	3	10	3
8	2	4	8,9,10
9	2	4	8,9,10
10	3	6	6,7

Case 21



Construct number	Static Pressure	Heuristic pressure	Rank of heuristic
	21	252	
1	3	47	2
2	2	44	3
3	2	35	5
4	3	171	1
5	2	24	8,9,10
6	2	36	4
7	2	33	6,7
8	2	24	8,9,10
9	2	33	6,7
10	1	24	8,9,10

The standardised static pressure is thus distributed as:

On constructs 1, 2, 3, 4, 6, 8 and 9, 3/26

On constructs 7 and 10, 2/26

On construct 5, 1/26

Step 2: Computation of heuristic pressure

The heuristic pressures are computed in the following 4 stages as shown in the diagram of Figure 10.8.

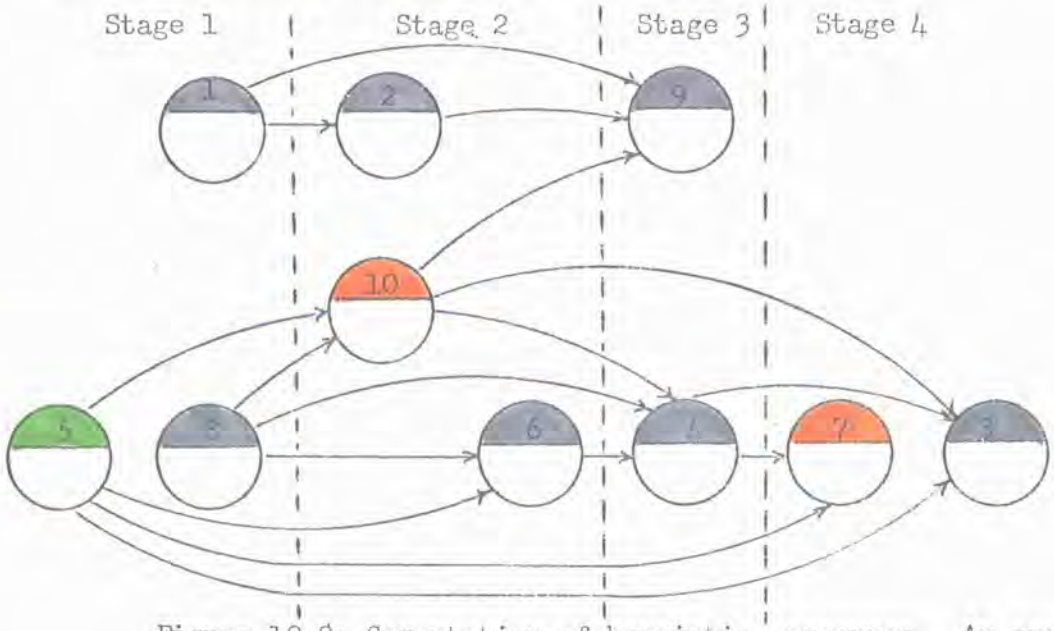


Figure 10.8: Computation of heuristic pressures. An example

In stage 1 are dealt those constructs that have no other constructs predetermining them. The heuristic pressures are, thus, the same as the standardised static pressures. Thus the heuristic pressures on construct 5 is 1/26 and on construct 1 and 8 it is 3/26.

In stage 2 the heuristic pressure on constructs 2, 6 and 10 is computed

- On construct 2, the heuristic pressure is: the SSP on construct 2 + the heuristic pressure due to it being predetermined by construct 1, which is:

  3/26 + 3/26 = 6/26

- On construct 6, the heuristic pressure has the following three components (with the values shown):

  (a) the SSP on construct 6 = 3/26

  (b) the pressure component from construct 5, due to construct 6 being predetermined by the former. This component is $\frac{1}{4}$ of the heuristic pressure on construct 5, which is $\frac{1}{4}$ x 1/26 = 1/104.

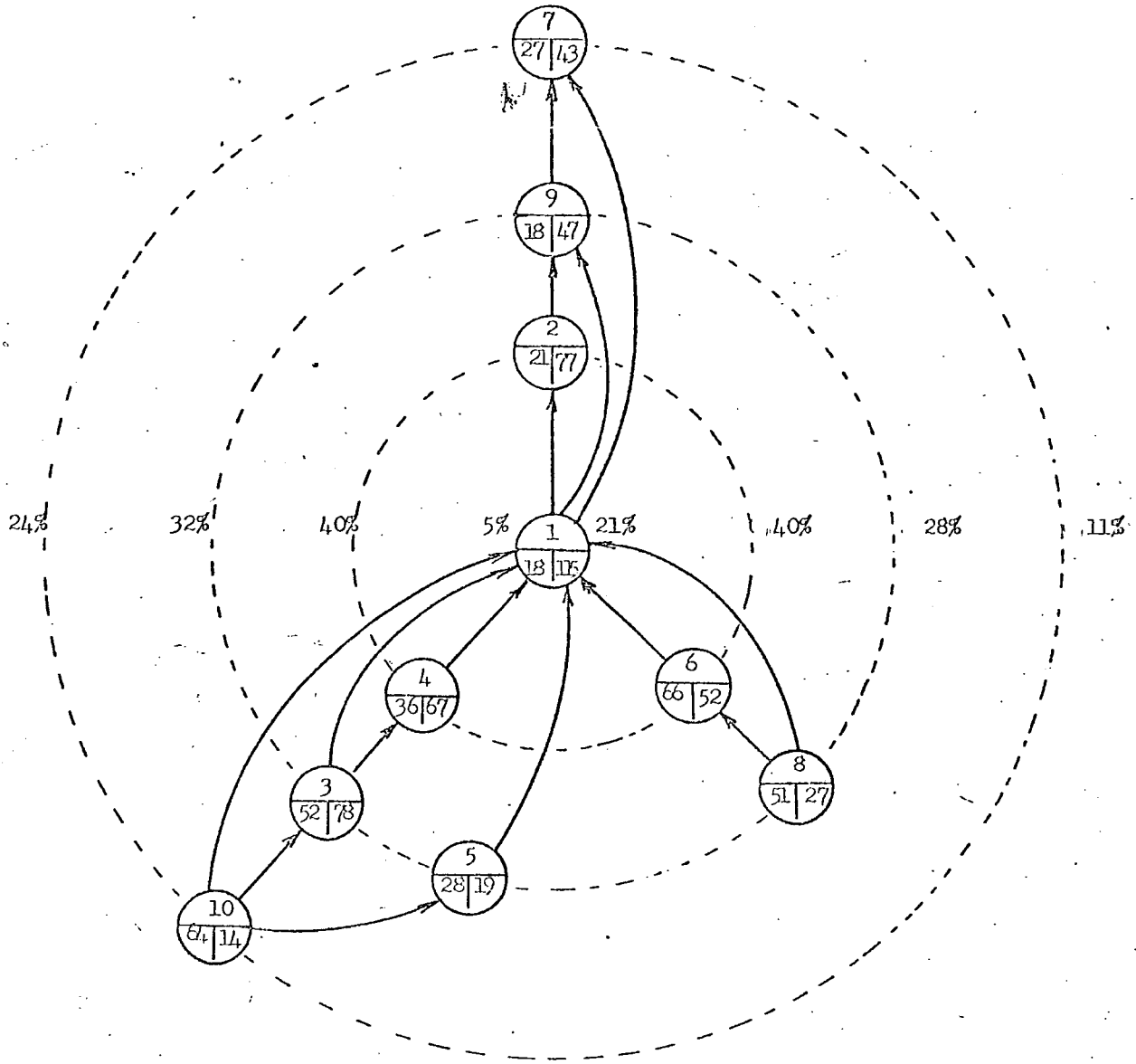


Figure 10.37: Common heuristic with data on low and high experiences superimposed

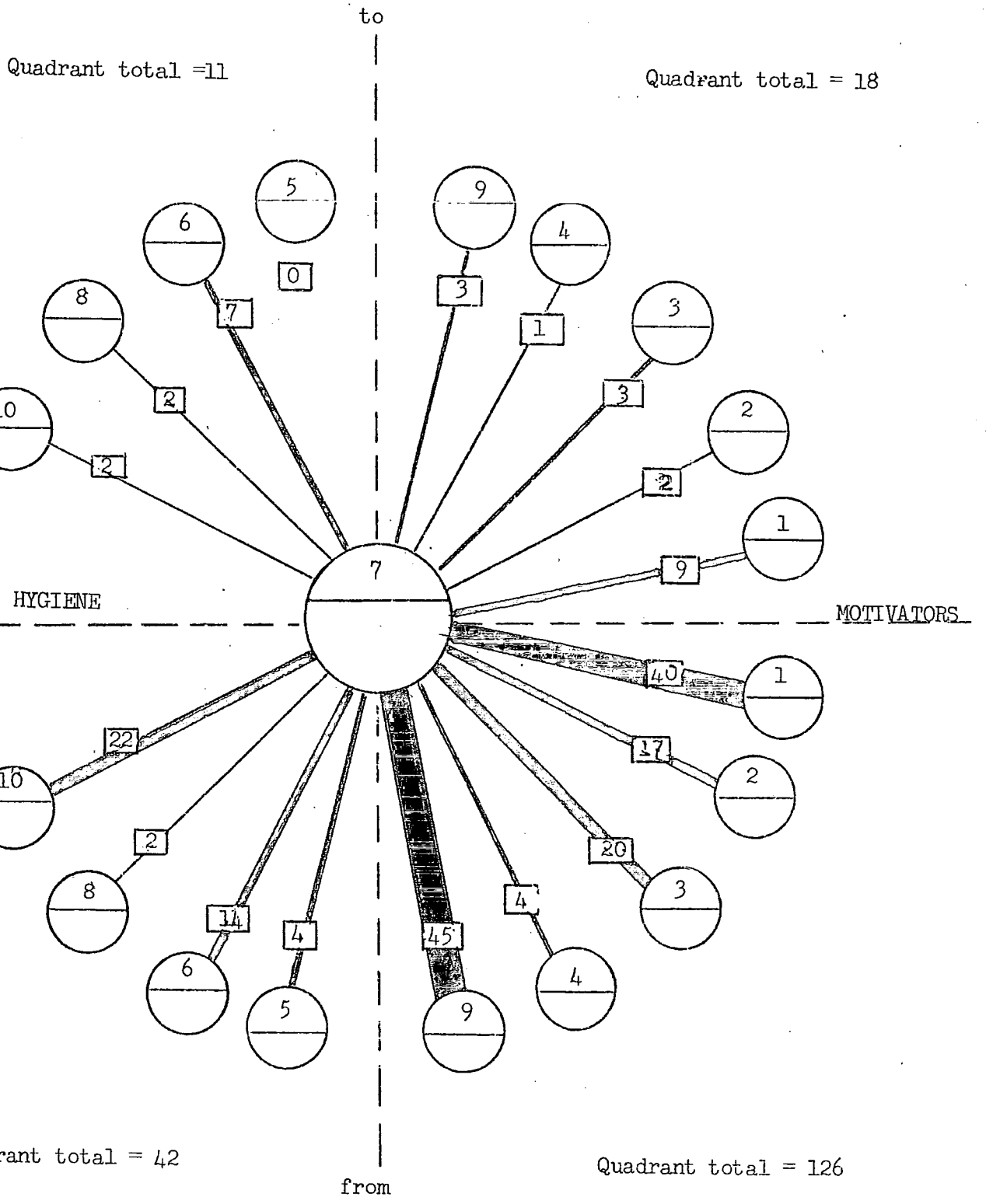
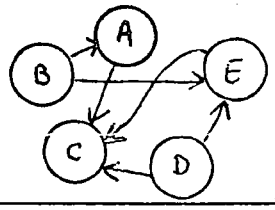


Figure 10.42: Connectivities of the 'salaries and benefits' construct

On the accompanying clock-face diagram are ten circles. Each circle contains a statement reflecting some conditions associated with, and related to, the work environment. Please draw arrows between the circles to indicate which condition pre-determines which other.

Example: On a five circle diagram the arrows could be drawn as shown below:



Note: If an arrow is drawn from A to C, do not draw one from C to A. Please feel free to draw as many arrows as you think appropriate.

The success I have in doing my job

The recognition I receive for the work I do

The working conditions prevalent at work. physical conds. & facilities

The nature of the work I carry out

The relationship I have with the boss

The control I have over my own and other's work

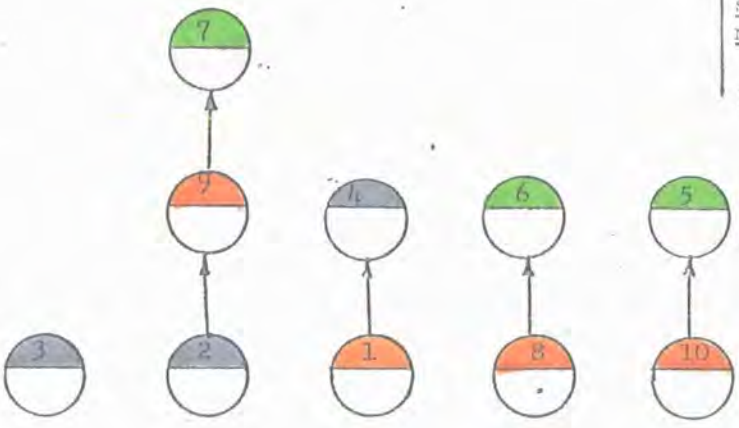
The salary and benefits I earn

The advancement I get through promotions

The technical competence of my boss and colleagues

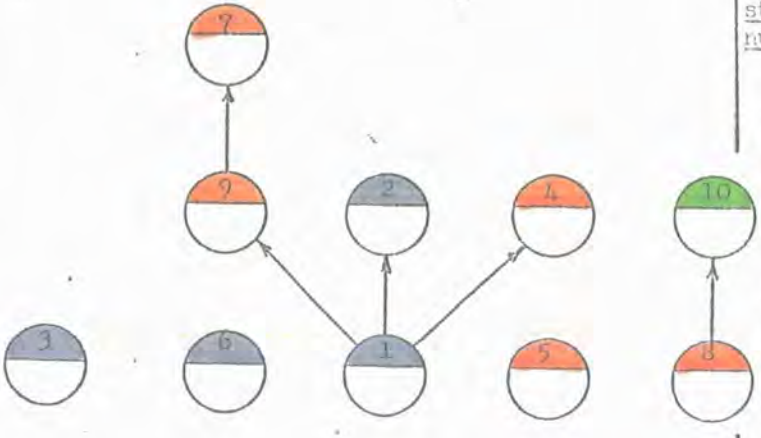
The policies and administration of the organization I work for.

Case 1



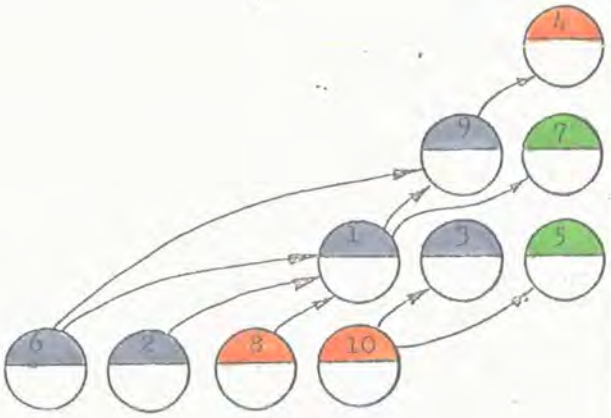
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	20	20	
1	2	2	8,9,10
2	3	3	4,5,6,7
3	3	3	4,5,6,7
4	3	5	2,3
5	1	3	4,5,6,7
6	1	3	4,5,6,7
7	1	6	1
8	2	2	8,9,10
9	2	5	2,3
10	2	2	8,9,10

Case 2



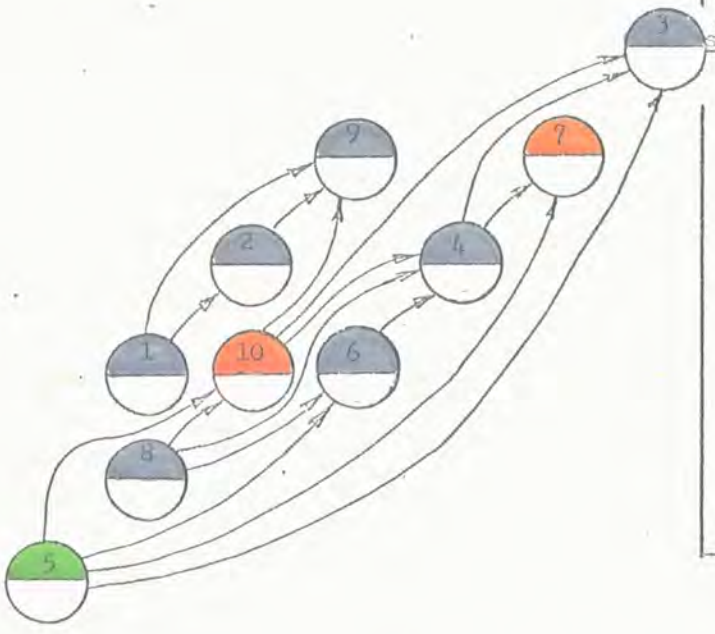
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	23	23	
1	3	3	3,4,5,6,7,8
2	3	4	2
3	3	3	3,4,5,6,7,8
4	2	3	3,4,5,6,7,8
5	2	2	9,10
6	3	3	3,4,5,6,7,8
7	2	5	1
8	2	2	9, 10
9	2	3	3,4,5,6,7,8
10	1	3	3,4,5,6,7,8

Case 3



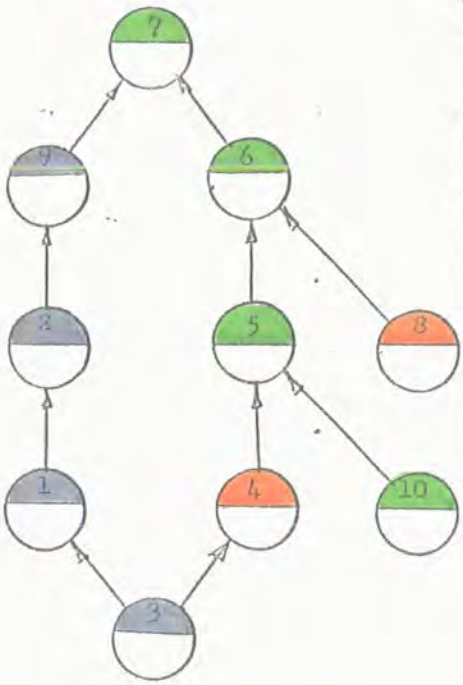
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	23	92	
1	3	38	2
2	3	12	6,7
3	3	16	5
4	2	45	1
5	1	8	8,9,10
6	3	12	6,7
7	1	23	4
8	2	8	8,9,10
9	3	37	3
10	2	8	8,9,10

Case 4



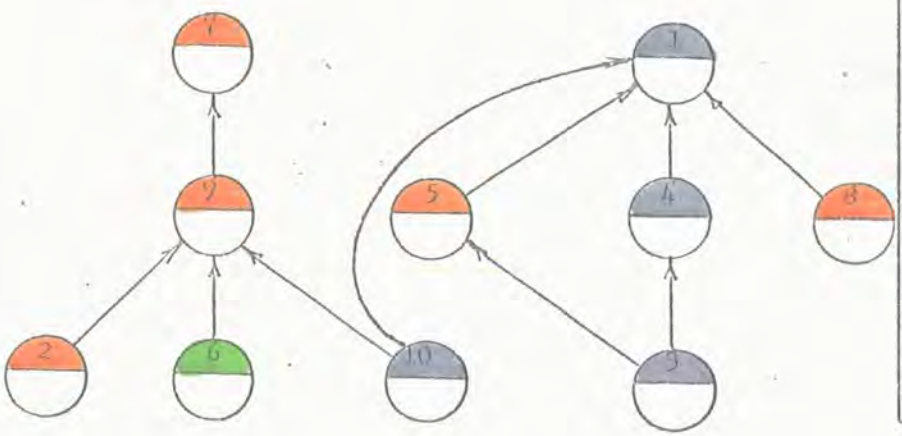
Con-struct No.	Static Pressure	Heuri-stic pres-sure	Rank of Heuristics
	26	312	
1	3	36	8,9
2	3	54	5
3	3	108	3
4	3	112	2
5	1	12	10
6	3	51	6
7	2	83	4
8	3	36	8,9
9	3	121	1
10	2	39	7

Case 5



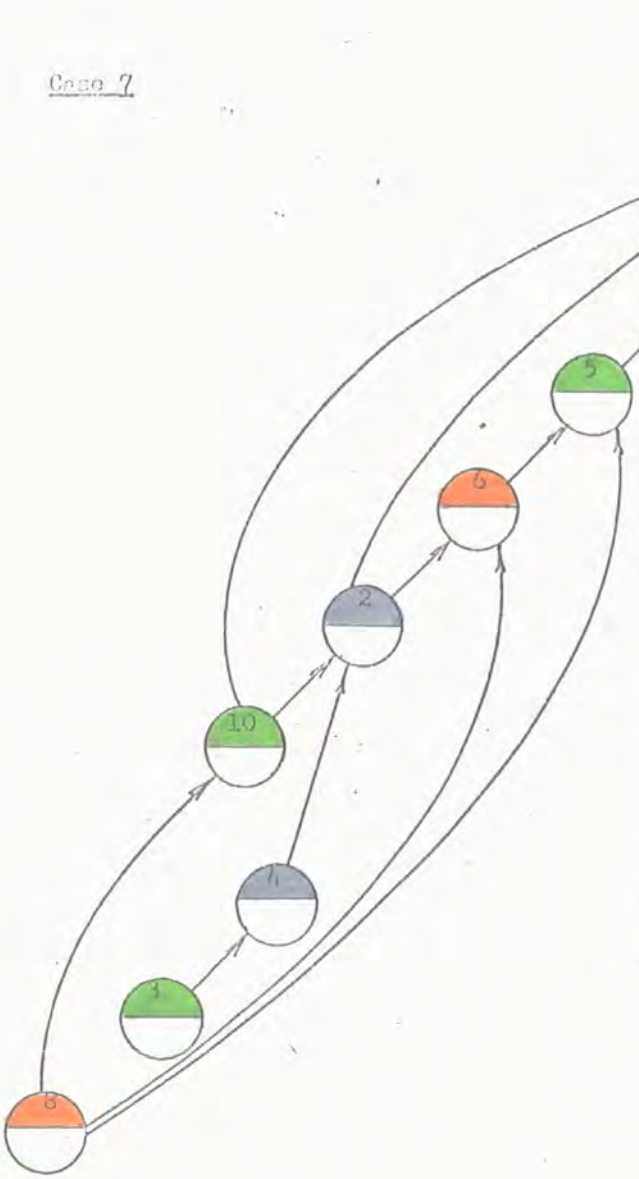
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	40	40	
1	6	9	6
2	6	15	4
3	6	6	8
4	4	7	7
5	2	10	5
6	2	17	3
7	2	40	1
8	4	5	9
9	6	21	2
10	2	2	10

Case 6



CN	SP	HP	Rank of heuristics
1	6	29	1
2	4	4	8,9
3	6	6	6,7
4	6	9	4
5	4	7	5
6	2	2	10
7	4	17	2
8	4	4	8,9
9	4	13	3
10	6	6	6,7

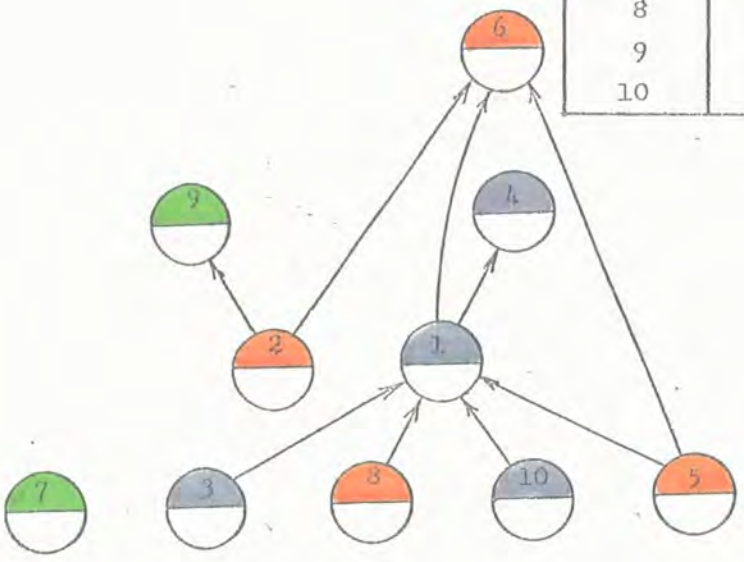
Case 7



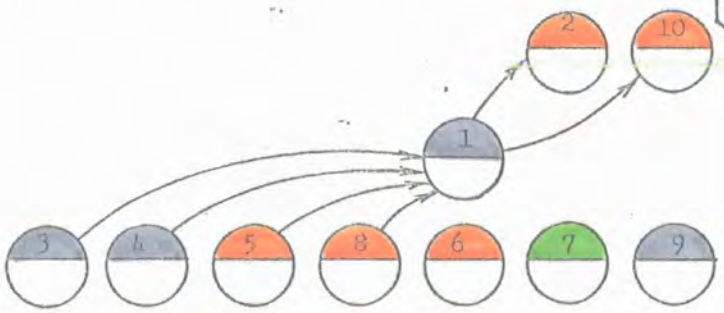
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	22	264	
1	3	131	3
2	3	102	4
3	1	12	10
4	3	48	7
5	1	95	5
6	2	75	6
7	3	264	1
8	2	24	8
9	3	228	2
10	1	20	9

Case 8

Constraint number	Static pressure	Heuristic pressure	Rank of heuristics
	22	22	
1	3	12	1
2	2	2	6,7,8,9
3	3	3	4,5
4	3	9	3
5	2	2	6,7,8,9
6	2	10	2
7	1	1	10
8	2	2	6,7,8,9
9	1	2	6,7,8,9
10	3	3	4,5

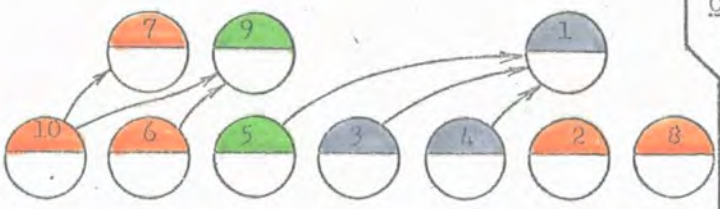


Case 9



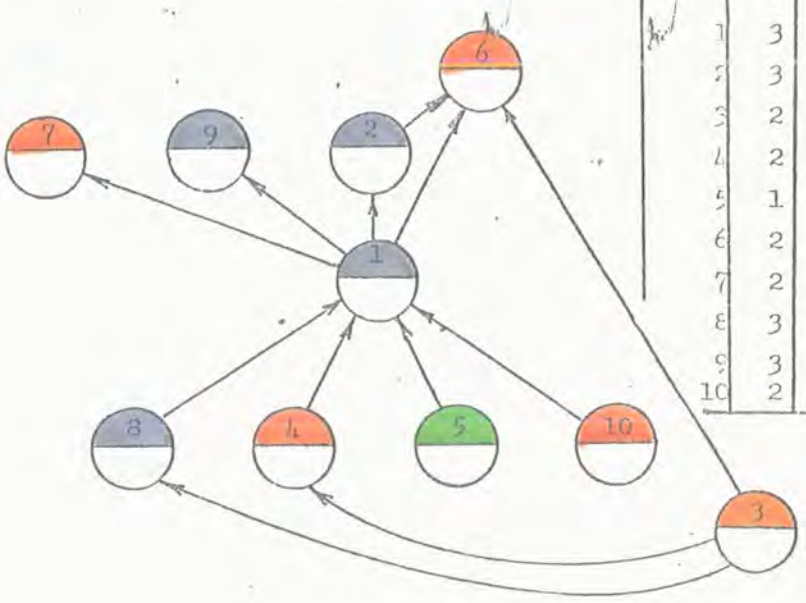
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	23	46	
1	3	26	1
2	2	17	2,3
3	3	6	4,5,6
4	3	6	4,5,6
5	2	4	7,8,9
6	2	4	7,8,9
7	1	2	10
8	2	4	7,8,9
9	3	6	4,5,6
10	2	17	2,3

Case 10



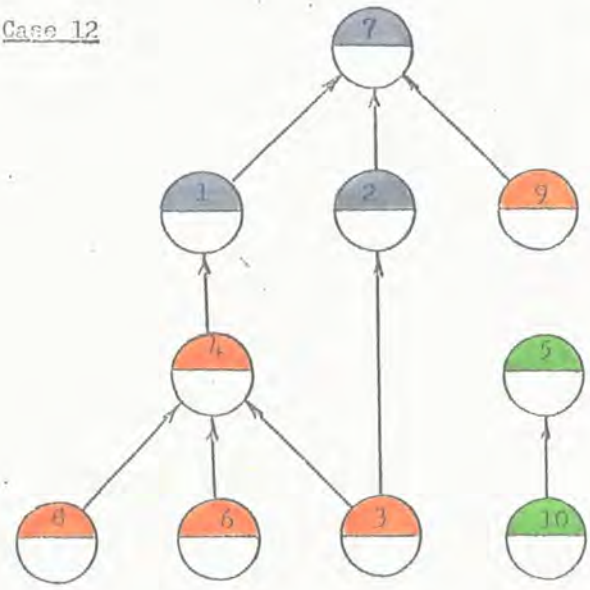
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	21	21	
1	3	10	1
2	2	2	6,7,8,9
3	3	3	3,4,5
4	3	3	3,4,5
5	1	1	10
6	2	2	6,7,8,9
7	2	3	3,4,5
8	2	2	6,7,8,9
9	1	4	2
10	2	2	6,7,8,9

Case 11



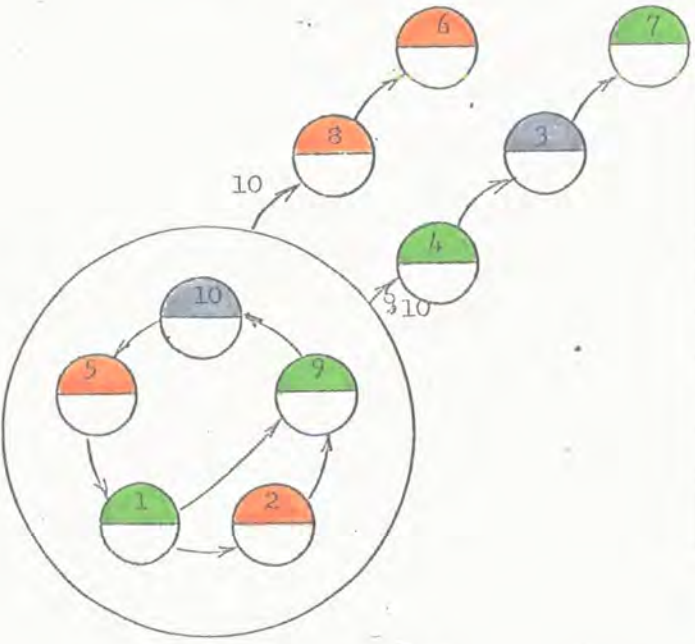
Con-struct No.	Static pres-sure	Heuristic pressure	Rank of heuristics
	23	276	
1	3	148	1
2	3	73	3,4
3	2	24	8,9
4	2	32	7
5	1	12	10
6	2	142	2
7	2	61	5
8	3	44	6
9	3	73	3,4
10	2	24	8,9

Case 12



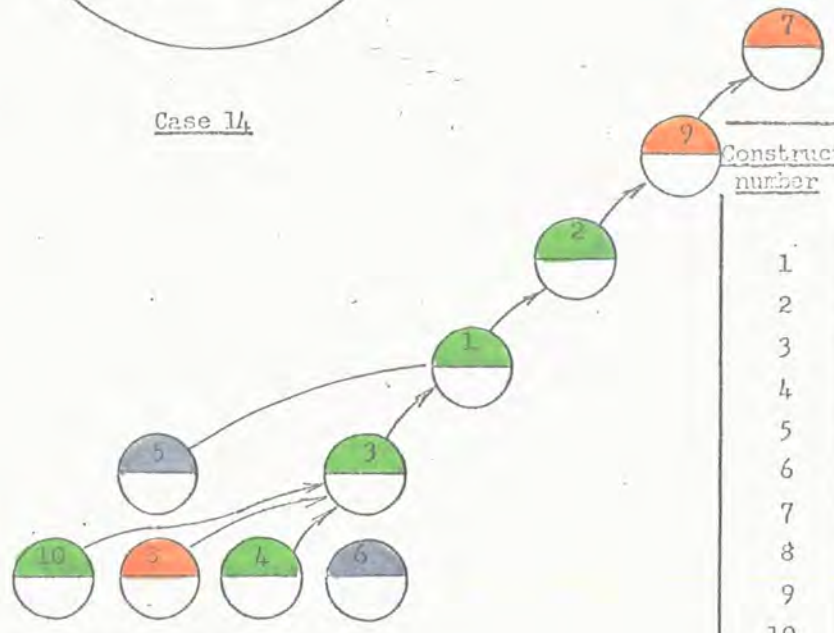
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	21	21	
1	3	10	2
2	3	4	4
3	2	2	5,6,7,8,9
4	2	7	3
5	1	2	5,6,7,8,9
6	2	2	5,6,7,8,9
7	3	19	1
8	2	2	5,6,7,8,9
9	2	2	5,6,7,8,9
10	1	1	10

Case 13



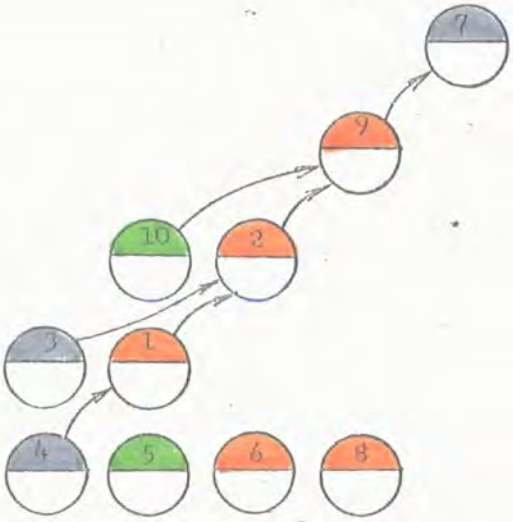
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	18	18	
1	1	1	9,10
2	2	2	7,8
3	3	10	2
4	1	7	3,4
5	2	2	7,8
6	2	7	3,4
7	1	11	1
8	2	5	5
9	1	1	9,10
10	3	3	6

Case 14



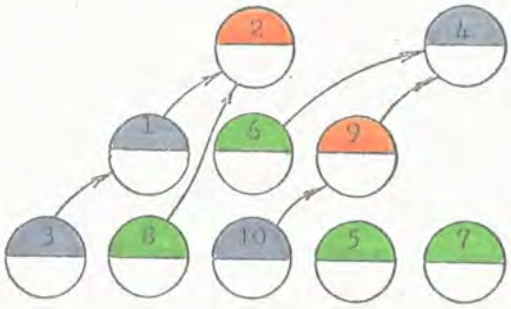
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	17	17	
1	1	9	4
2	1	10	3
3	1	5	5
4	1	1	9,10
5	3	3	6,7
6	3	3	6,7
7	2	14	1
8	2	2	8
9	2	12	2
10	1	1	9,10

Case 15



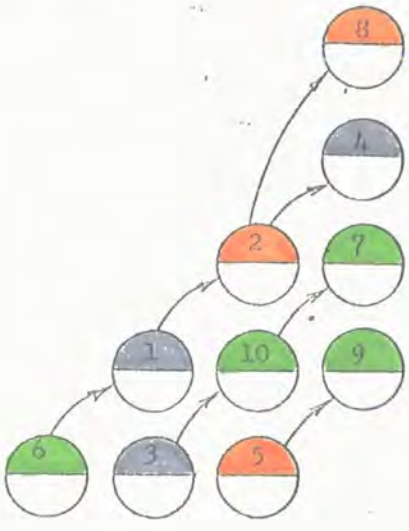
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	21	42	
1	2	10	4
2	2	17	3
3	3	6	5, 6
4	3	6	5, 6
5	1	2	9, 10
6	2	4	7, 8
7	3	32	1
8	2	4	7, 8
9	2	26	2
10	1	2	9, 10

Case 16



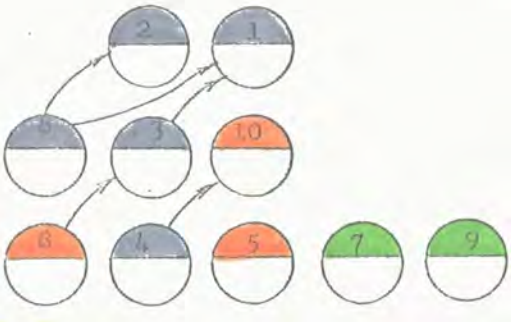
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	21	21	
1	3	6	3
2	2	9	1,2
3	3	3	5,6
4	3	9	1,2
5	1	1	7,8,9,10
6	1	1	7,8,9,10
7	1	1	7,8,9,10
8	1	1	7,8,9,10
9	2	5	4
10	3	3	5,6

Case 17



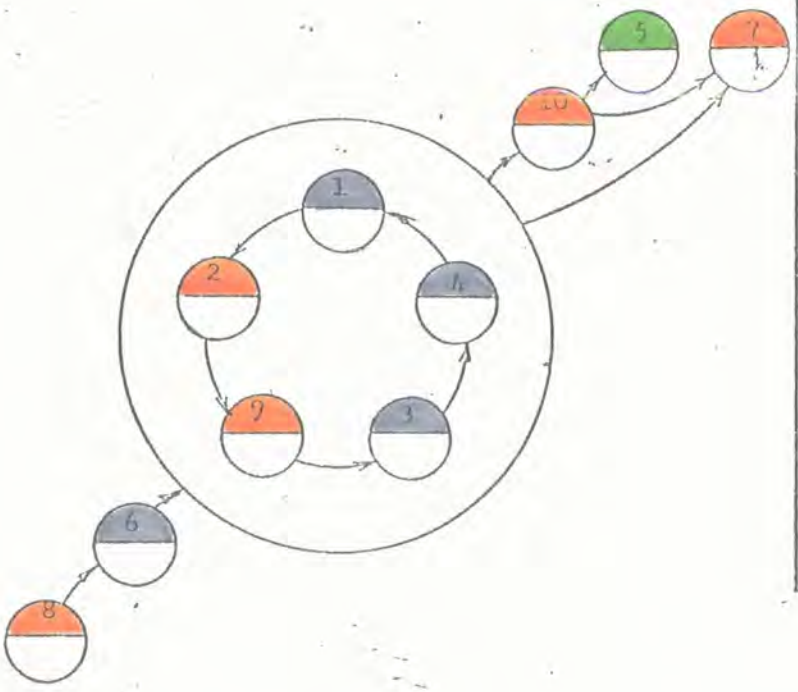
Construct number	Static Pressure	Heuristic pressure	Rank of heuristics
	19	19	
1	3	4	5,6
2	2	6	1,2
3	3	3	7,8
4	3	6	1,2
5	2	2	9
6	1	1	10
7	1	5	3,4
8	2	5	3,4
9	1	3	7,8
10	1	4	5,6

Case 18



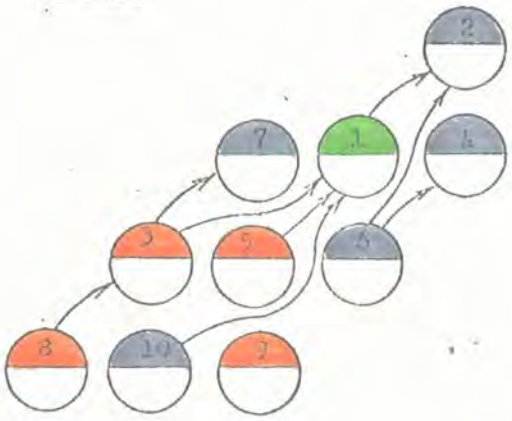
Construct number	Static pressure	Heuristic pressure	Rank of heuristics
	23	46	
1	3	19	1
2	3	9	4
3	3	10	2,3
4	3	6	5,6
5	2	4	7,8
6	3	6	5,6
7	1	2	9,10
8	2	4	7,8
9	1	2	9,10
10	2	10	2,3

Case 19



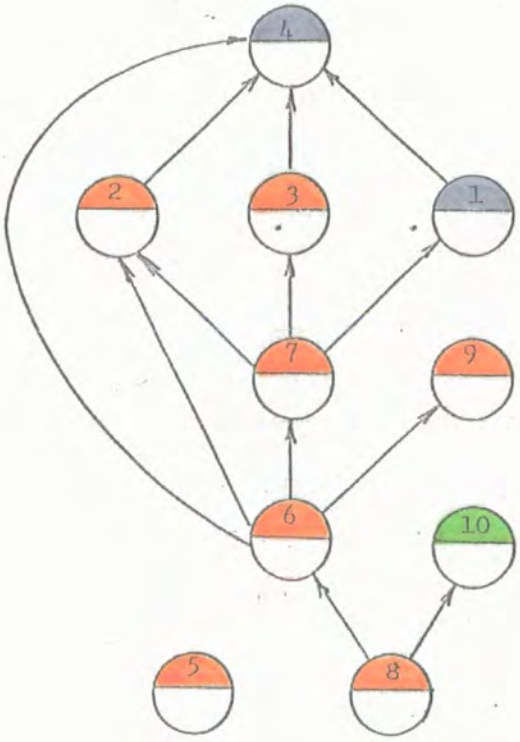
Construct number	Static pressure	Heuristic pressure	Rank of heuristic
	23	230	
1	3	36	5,6,7,8,9
2	2	36	5,6,7,8,9
3	3	36	5,6,7,8,9
4	3	36	5,6,7,8,9
5	1	65	3
6	3	50	4
7	2	165	1
8	2	20	5,6,7,8,9
9	2	36	10
10	2	110	2

Case 20



Construct number	Static Pressure	Heuristic pressure	Rank of heuristics
	24	48	
1	1	16	2
2	3	25	1
3	2	8	5
4	3	9	4
5	2	4	8,9,10
6	3	6	6,7
7	3	10	3
8	2	4	8,9,10
9	2	4	8,9,10
10	3	6	6,7

Case 21



Construct number	Static Pressure	Heuristic pressure	Rank of heuristic
	21	252	
1	3	47	2
2	2	44	3
3	2	35	5
4	3	171	1
5	2	24	8,9,10
6	2	36	4
7	2	33	6,7
8	2	24	8,9,10
9	2	33	6,7
10	1	24	8,9,10

2. A colour code signifies the importance attributed to the constructs.

The colour notation used is as follows:

(i) The highest importance is shown in blue
(ii) Intermediate importance is shown in orange
(iii) The least importance is shown in green

3. The predetermining connectivity is shown by directed arrows.

By the side of each heuristic map and supplementary to each is a 4 column table, which will be explained in the course of descriptions in the next subsection.

10.3.2. Further concepts for evaluating heuristics

In this section are presented some procedural and notational concepts that were developed for the purpose of mathematical evaluation of heuristic maps and comparison of heuristic maps of different persons. The introduction of these concepts is followed by a brief discussion on the shapes of heuristic maps.

(i) Standardisation. The study participants were asked to signify the importance they attached to the 10 constructs on a scale of 1 to 3 for each construct. One designated the highest importance and 3 the least. Following this procedure it would be possible for one person, say X to score all the constructs at level 3, while another person, say Y, scored all of them at level 1. Given that 10 constructs were used in the study, for person X the weighted total for the importances attached would then be 30, while for person Y the corresponding figure would be 10. The decision was therefore made to standardise the importance attached to constructs through division of each grade by the weighted total. This mathematical manipulation is a form of normalisation, based on the individual. By this method, while for person X, the importance attached to each construct would be 3/30, for person Y it would, similarly, be 1/10.

At the same time, while the respondents were asked to designate their highest importance by coding it 1 and to show their least importance by coding it 3, to permit methematical manipulation the coding system, in evaluation, was reversed. Reversing implied that the highest importance would be designated by a score of 3 and the least importance by a score of 1.

To clarify the above concepts on standardisation consider the heuristic maps of case 1 and case 2 from the pilot study data.

Case 1

(a) attached the highest importance to constructs 2, 3 and 4
(b) attached intermediate importance to constructs 1, 8, 9 and 10
(c) attached the lowest importance to constructs 5, 6 and 7

The weighted total, from the above, is:

$$(3 \times 3) + (4 \times 2) + (3 \times 1) = 20$$

so, the standardised static pressures, from the above, are:

(a) for constructs 2, 3 and 4 3/20 each
(b) for constructs 1, 8, 9 and 10 2/20 each
(c) for constructs 5, 6 and 7 1/20 each

Case 2

(a) attached the highest importance to constructs 1, 2, 3 and 6
(b) attached intermediate importance to constructs 4, 5, 7, 8 and 9
(c) attached the lowest importance to constructs 10

The weighted total, from the above, is:

$$(4 \times 3) + (5 \times 2) + (1 \times 1) = 23$$

so, the standardised static pressures, from the above, are:

(a) for constructs 1, 2, 3 and 6 3/23
(b) for constructs 4, 5, 7, 8 and 9 2/23
(c) for construct 10 1/23

(ii) Pressure transmission-assumption

Consider case 1 from the pilot study data. Here construct 2 predetermines construct 9 which in turn predetermines construct 7. Taking the standardised static pressures, the heuristic pressures on construct 9 would be 5/20 and on construct 7, 6/20.

Now consider case 2. Here construct 1 predetermines three other constructs, namely 2, 4 and 9. In cases where there is a one-to-many predetermining relationship, it is necessary to decide how to proportion the pressure which is transmitted to the receiving nodes. The author decided that the pressure should be equally transmitted along all the connections. The standardisation introduced in (i) above had ensured that the sum of the standardised static pressures was 1. In order to maintain the heuristic pressures in standardised form the author found it necessary to follow the equal-transmission procedure in such a way that the number of outgoing connections determined the proportion of pressure transmitted along each connection. By way of explanation through example consider cases 2 and 3.

In case 2, the one-to-many relationship from construct 1 (to constructs 2, 4 and 9, i.e. three outgoing connections) with a standardised static pressure of 3/23, would entail the transmission of a third of its pressure (i.e. 1/3 of 3/23) along each of the outgoing connections. Thus, the heuristic pressure on construct 4 would be 4/23 + (1/3 of 3/23); on construct 2 the heuristic pressure would be 3/23 + (1/3 of 3/23) and on construct 9 it would be 2/23 + (1/3 of 3/23).

In case 3, the one-to-many relationships of constructs 1, 6 and 10 predetermining other constructs would thus lead to:

(a) The heuristic pressure on construct 1 being,

standardised static pressure (SSP) on construct 1 + the SSP on constructs 2 and 8 + $\frac{1}{2}$ of the SSP on construct 6. And this is

$$3/23 + (2/23 + 3/23) + (\tfrac{1}{2} \times 3/23) = 19/46$$

(b) The heuristic pressures on constructs 3 and 5 being,

the SSP on construct 3 + $\frac{1}{2}$ of SSP on construct 10 (= 3/23 + $\frac{1}{2}$ x 2/23 = 4/23) and

the SSP on construct 5 + $\frac{1}{2}$ of SSP on construct 10 (= 1/23 + $\frac{1}{2}$ x 2/23 = 2/23) respectively

(c) The heuristic pressure on construct 7 being,

the SSP on construct 7 + $\frac{1}{2}$ of the heurstic pressure on construct 1, which is 1/23 + ($\frac{1}{2}$ x 19/46) = 23/92

(d) The heuristic pressure on construct 9 being,

the SSP on construct 9 + $\frac{1}{2}$ of SSP on construct 6 + $\frac{1}{2}$ of heuristic pressure on construct 1, which altogether is:

$$3/23 + (\tfrac{1}{2}.3/23) + (\tfrac{1}{2} \text{ of } 19/46) = 37/92$$

(iii) <u>The method of computing heuristic pressures for the complete heuristic map - an example</u>

Consider case 4 from the pilot study data. The heuristic pressure on all the constructs will be computed to familiarise the reader with how this was done not only for each pilot study case but also for the main study.

<u>Step 1</u>: Computation of the weighted importances.

- Highest importance on constructs 1, 2, 3, 4, 6, 8 and 9, giving a weighted contribution of 7 x 3 = 21
- Intermediate importance on constructs 7 and 10, giving a weighted contribution of 2 x 2 = 4
- Lowest importance on construct 5, giving a weighted contribution of 1 x 1 = 1

Thus the weighted total of all the importances is 21 + 4 + 1 = 26.

The standardised static pressure is thus distributed as:

On constructs 1, 2, 3, 4, 6, 8 and 9, 3/26

On constructs 7 and 10, 2/26

On construct 5, 1/26

Step 2: Computation of heuristic pressure

The heuristic pressures are computed in the following 4 stages as shown in the diagram of Figure 10.8.

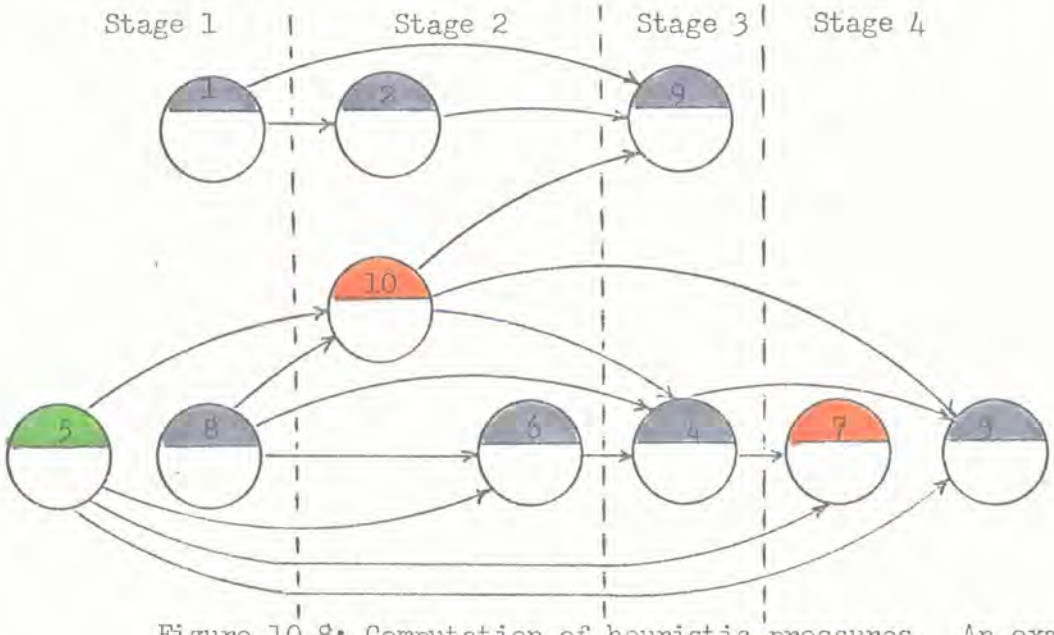


Figure 10.8: Computation of heuristic pressures. An example

In stage 1 are dealt those constructs that have no other constructs predetermining them. The heuristic pressures are, thus, the same as the standardised static pressures. Thus the heuristic pressures on construct 5 is 1/26 and on construct 1 and 8 it is 3/26.

In stage 2 the heuristic pressure on constructs 2, 6 and 10 is computed

- On construct 2, the heuristic pressure is: the SSP on construct 2 + the heuristic pressure due to it being predetermined by construct 1, which is:

  $3/26 + 3/26 = 6/26$

- On construct 6, the heuristic pressure has the following three components (with the values shown):

  (a) the SSP on construct 6 = 3/26

  (b) the pressure component from construct 5, due to construct 6 being predetermined by the former. This component is $\frac{1}{4}$ of the heuristic pressure on construct 5, which is $\frac{1}{4} \times 1/26 = 1/104$.

(c) The pressure component from construct 8, due to this node predetermining construct 6. The value of this component is 1/3 of the heuristic pressure on construct 8, which evaluates to 1/3 x 3/26 = 1/26.

The total heuristic pressure on construct 6, thus, is

$$3/26 + 1/104 + 1/26 = 17/104$$

- On construct 10, the heuristic pressure also has 3 components, as shown below.

(a) The SSP on construct 10

(b) The component of the heuristic pressure from construct 5 due to this node predetermining node 10.

(c) The component of the heuristic pressure from construct 8, due to this node predetermining node 10.

The sum of these components, in the above given order, is:

$$2/26 + (\tfrac{1}{4} \text{ of } 1/26) + (1/3 \text{ of } 3/26) = 13/104$$

In stage 3 the heuristic pressure on constructs 4 and 9 is computed.

- On construct 4, the four components of the heuristic pressure and their values are:

(a) The SSP on construct 4, i.e. 3/26

(b) The component of heuristic pressure from node 10, i.e. 1/3 of 13/104 = 13/312.

(c) The component of heuristic pressure from node 8, i.e. 1/3 of 3/26 = 1/26

(d) The component of heuristic pressure from node 6, i.e. 17/104.

The sum of these components is 112/312.

- On construct 9 the total heuristic pressure has, again, 4 components: the standardised static component on construct 9 itself and the three components of the heuristic pressure from construct 1, 2 and 10. The total sum of these components is 121/312 and is made up 3/26 (SSP on construct 9) + 1/3 of 13/104 (from construct 10) + 1/3 of 3/26 (from construct 8) + 17/104 (from construct 6).

In stage 4 is computed the heuristic pressure on constructs 7 and 3.

- On construct 7, the heuristic pressure has the following 3 components:

(a) The SSP on the construct itself, i.e. 2/26.

(b) The component of heuristic pressure from node 4, i.e. $\frac{1}{2}$ of 112/312

(c) The component of heuristic pressure from node 5, i.e. $\frac{1}{4}$ of 1/26.

The three components together produce a heuristic pressure of 83/312 on construct 7.

- On construct 3, the heuristic pressure has the following 4 components:

(a) The SSP on the construct 3 itself.

(b) The components of heuristic pressure from nodes 10, 4 and 5 which are 1/3 of 13/104, $\frac{1}{2}$ of 112/312 and $\frac{1}{4}$ of 1/26, respectively.

These four components, together produce a heuristic pressure of 108/312 on construct 3.

At the end of stage 4, the heuristic pressure on all the ten constructs forming the heuristic map is available.

Note that:

1. There are three starting nodes in this heuristic map - constructs 1, 5 and 8.
2. There are three terminal nodes in this heuristic map - constructs 3, 7 and 9.
3. The sum of the heuristic pressures on the terminal nodes (108/312, 83/312 and 121/312 on constructs 3, 7 and 9) adds up to 1, which is the same as the sum of the standardised static pressures on all the nodes.

Having described how the heuristic pressure on each construct was computed for each participant to the pilot, and to the main, study it would be appropriate to comment on the 4 column table to the side of each heuristic map. Note, however, that a special type of heuristic map necessitated the computation of heuristic pressure in an exceptional way. The exceptional case will be discussed under item (iv) of this section.

The 4-column table

The first column of this table consists simply of the reference numbers of the constructs. In column 2, the number at the top, enclosed within a circle is the weighting factor derived from the importance attached to the constructs by the respondent. For example, for case 21 the weighting factor is 21. The other numbers in this column indicate the static pressures for each of the constructs. The standardised static pressures are derivable from the numbers of the second column by simply dividing each value by the weighting factor.

Column 3 is similar to column 2, in that the top of the column contains the divisor by which all the other values of this column should be divided. The column contains the heuristic pressures on the constructs, as derived from the corresponding heuristic map.

Column 4 simply contains the ranks assigned on the basis of the value of the heuristic pressures given in column 3. The highest heuristic pressure is given rank 1, the second highest rank 2, etc. till rank 10 is assigned to the construct with the least heuristic pressure. Note that where the values of the heuristic pressures on different constructs is the same, tied ranks are possible. In case 21, there are two sets of ties: constructs 7 and 9 show the 6th and 7th rank, constructs 5, 8 and 10 show the 8, 9 and 10th ranks.

(iv) Shapes of heuristics

Here will be discussed some of the shapes of the heuristic maps which emerged from the data collected in the studies. Examples will be given from the pilot study data and, where necessary, comments made with reference to the main study data.

The subject of the discussion being the connectivity of the constructs, the foremost type of classification of shapes is derived from whether or not all the 10 constructs are linked in one or more clusters.

Complete linkage is said to obtain when all the nodes in the heuristic map are linked into a single cluster. With reference to the pilot study data this situation obtained with respect to cases 4, 5, 6, 7, 11, 13 and 19 (i.e. 7 out of 21 cases).

When complete linkage does not obtain, the connectivity takes the form of either 'clusters' or 'clusters and isolates'. 'Cluster' implies two or more (but less than 10, for otherwise it would be a case of complete linkage) nodes linked together. 'Isolate' implies some (but not all, for otherwise there would be no heuristic map) nodes being unconnected to any other node. Often, the study participants connected the constructs such that in the heuristic map, clusters and isolates occurred simultaneously, i.e. nodes in isolation and clustering of nodes occurred at the same time in the heuristic maps. For example, in the pilot

study data while clustering only (i.e. without isolates) occurred in cases 3, 12 and 17 (i.e. 3 out of 21 cases), clustering and isolates happened in cases 1, 2, 8, 9, 10, 14, 15, 16 18, 20 and 21 (i.e. 11 out of 21 cases).

The first type of classification, on the basis of connectivity, is:

1. Complete linkage
2. Clusters
3. Clusters with isolates

The next type of classification is based upon the shape of the path between connected nodes. Note that the second type of classification is independent of the first type and thus both could be attempted with the same set of data, as will be done later on with the main study data. Further, note that where clusters occur, each cluster would be classified independently by this second schema.

The path between connected nodes, which emerged from the data collected in the studies could be classified as:

1. Linear
2. Flower
3. Net
4. Circular

The four types of paths listed above will now be briefly discussed.

Linear connectivity occurs where the nodes are linked one to another such that, with the exception of the terminal nodes, each node has only one 'to-connection' and only one 'from-connection'. With respect to the terminal nodes, the starting node has only the 'to-connection' and the end node has only the 'from-connection'. Linear connectivity is diagrammatically depicted in Figure 10.9.

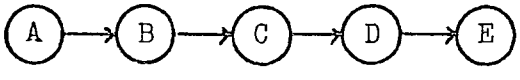


Figure 10.9: Linear connectivity with 5 nodes

Linear connectivity with complete linkage, i.e. all the 10 nodes linearly connected, did not occur in the pilot study data but did in the main study data. In cluster form, linear connectivity occurred in pilot study data as follows:

(a) Case 1 - 4 linear connectivities (3 with 2 nodes and 1 with 3)

(b) Case 2 - 1 linear connectivity (with 2 nodes)

(c) Case 12 - 1 linear connectivity (with 2 nodes)

(d) Case 17 - 2 linear connectivities (1 with 3 nodes and the other with 2)

(e) Case 18 - 1 linear connectivity (with 2 nodes)

Note that the occurrence of linear connectivity implies the absence of both the one-to-many and many-to-one types of connectivities.

Flower connectivity occurs when, for a given set of connected nodes, any pair is uniquely connected. The implication here is that while both the one-to-many and many-to-one types of connections may occur, there should be no alternative paths between a given pair of nodes. Figure 10.10 depicts flower connectivity.

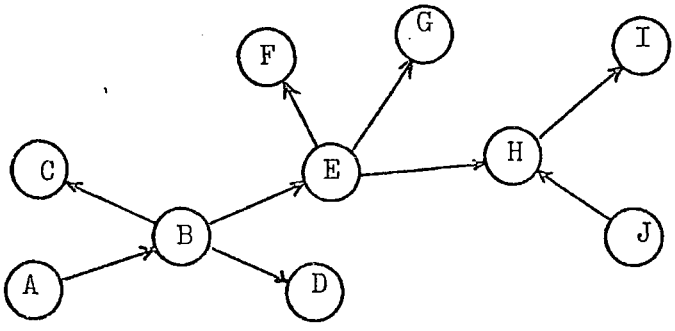


Figure 10.10: Flower connectivity with 10 nodes

In the pilot study data, flower connectivity occurred in the heuristic maps of 9 cases. The cases numbers and the number of nodes involved in each occurrence are listed below:

Case 2 - 5 nodes (constructs 1, 2, 4, 7 and 9)

Case 3 - 3 nodes (constructs 3, 5 and 10)

Case 9 - 7 nodes (constructs 1, 2, 3, 4, 5, 8 and 10)

Case 10 - 2 flower clusters with 4 nodes each (constructs 1, 3, 4 and 5) and (constructs 6, 7, 9 and 10)

Case 14 - 9 nodes (constructs 1, 2, 3, 4, 5, 7, 8, 9 and 10)

Case 16 - 2 flower clusters with 4 nodes each (constructs 1, 2, 3 and 8) and (constructs 4, 6, 9 and 10)

Case 17 - 5 nodes (constructs 1, 2, 4, 6 and 8)

Case 18 - 5 nodes (constructs 1, 2, 3, 6 and 8)

Case 20 - 9 nodes (constructs 1, 2, 3, 4, 5, 6, 7, 8 and 10)

Net connectivity. Modification to flower connectivity so that the heuristic map contains alternative paths between one, or more, pairs of nodes leads to the

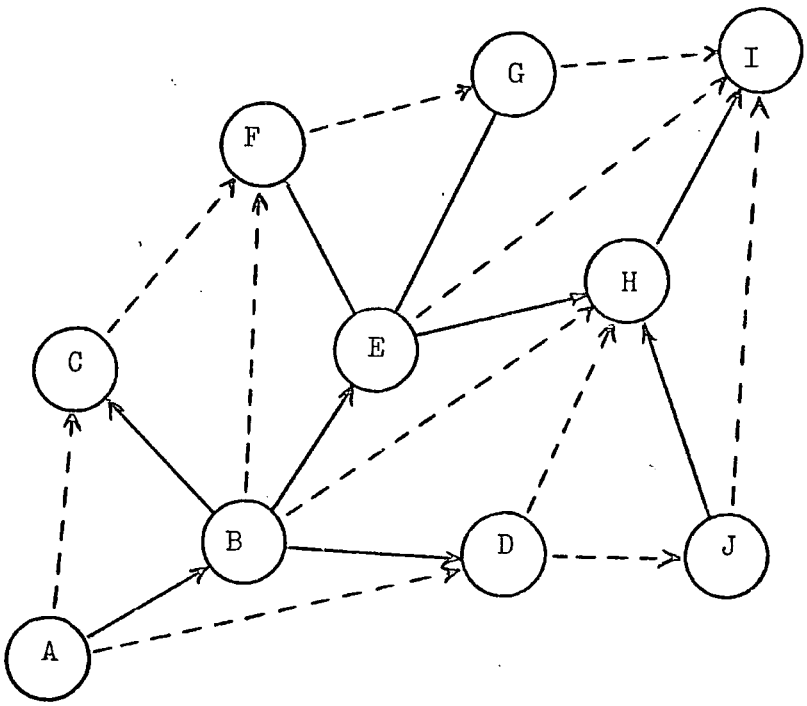


Figure 10.11: Net connectivity with 10 nodes

classification of the heuristic map as one of net connectivity. Figure 10.11 takes the basic connectivity pattern of the figure discussed in the foregoing and superimposes on it further connections, which are shown by broken arrows. The presence of one, or more, of these additional connectivities leads to the existence of alternative paths between some pairs of nodes. For example, the additional connection between nodes D and J, gives rise to the following two paths:

(a) A to B, B to E, E to H

(b) A to B, B to D, D to J, and J to H

between nodes A and H. The presence of the connection between D and J, through the creation of alternative paths thus creates net connectivity.

In the pilot study data, net connectivity was found in 10 cases, which together with the nodes involved are listed below.

Case 3 - alternative paths between constructs 6 and 9

(a) 6 to 9
(b) 6 to 1, 1 to 9

Case 4 - alternative paths between a number of construct pairs, e.g.

(a) 8 to 10, 10 to 3
(b) 8 to 6, 6 to 4, and 4 to 3

Case 5 - alternative paths between 3 and 7, and between 10 and 6

Case 6 - alternative paths between 3 and 1

Case 7 - alternative paths between 8 and 9 (and many other pairs of nodes)

Case 8 - alternative paths between 5 and 6

Case 11 - alternative paths between 3 and 6 (and many other pairs of nodes)

Case 12 - alternative paths between 3 and 7

Case 15 - alternative paths between 3 and 9

Case 21 - alternative paths between 6 and 4 (and many other pairs of nodes)

Circular connectivity. In some heuristic maps, e.g. cases 13 and 19 in the pilot study data, connectivity between constructs takes the circular form. This form will now be discussed. The instructions given to the study participants precluded directionality being shown, say, from construct A to B as well as from B to A. The data collected, however, showed that circularity could be built through the linkages between three or more constructs - a minimum of three being

necessary for circularity. The diagram of Figure 10.12 attempts to depict the notion of circularity. Essentially, then, the notion depicts three or more nodes joined in an endless loop. One possible way of looking at circularity woul beto consider the subjects, whose heuristic maps contain circularity, as being unable to discriminate between the constructs. This argument would find support

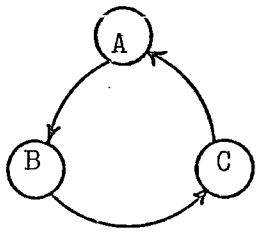


Figure 10.12: Circular connectivity between 3 nodes

from Walker and Marriott (1951) who found some individuals in their sample similarly unable to segregate certain aspects of work. However, in the context of the data being discussed here, as to what type of individual, what type of construct and under what circumstances circularity emerges would have to be separately and further researched. In the pilot study circularity was found to occur in only two cases (of the 21). The case numbers with circularity and the constructs involved in each case are listed below.

Case 13 - Circularity of 5 nodes (constructs 1, 2, 5, 9 and 10)

Case 19 - Circularity of 5 nodes (constructs 1, 2, 3, 4 and 9)

Although both the cases with circularity involved 5 constructs, in the context of the study, theoretically, there could be any number (between 3 and 10) so involved.

The location of the circularity, within the heuristic map, can also vary. In the pilot study data, case 13 produced a circularity at the bottom of the heuristic map; in case 19, the circularity is in the middle of the heuristic map. Of course, a circularity could occur at the top of the heuristic map, and such cases were found in the main study.

It was earlier stated that in some exceptional cases the procedure for the calculation of heuristic pressures was modified somewhat. The exceptional cases were those involving circularity. In these instances the construct complex

forming the circularity was assigned the same (aggregated) heuristic pressure. For constructs outwith the circularity the computation was exactly as already described. How the aggregation, within the circularity, was conducted will be explained through the step-by-step computations conducted for case 19 from the pilot study.

Example of computing the heuristic pressure for heuristic maps containing circularity

Stage 1: Heuristic pressure on nodes 8 and 6, respectively 2/23 and 5/23.

Stage 2: Heuristic pressure on each construct involved in the circularity = 1/5 (the sum of the standard static pressures on the nodes in circularity) + (heuristic pressure on nodes predetermining the circularity-nodes)

$$= 1/5 \left[\left(3 \times \frac{3}{23} + 2 \times \frac{2}{23}\right) + (5/23) \right]$$

$$= 1/5 \left[18/23\right] = 36/230$$

Stage 3: Heuristic pressure on node 10 = SSP on construct 10 + $\frac{1}{2}$ of heuristic pressure on predetermining constructs within circularity

$$= 2/3 + \tfrac{1}{2} \text{ of } \frac{36 \times 5}{230}$$

$$= \frac{20}{230} + \frac{90}{230} = \frac{110}{230}$$

Stage 4: Heuristic pressure on construct 5 = SSP on construct 5 + $\frac{1}{2}$ of heuristic pressure on node 10

$$= 1/23 + 55/230 = 65/230$$

Heuristic pressure on construct 7 = SSP on construct 7 + $\frac{1}{2}$ heuristic pressure on construct 10 + $\frac{1}{2}$ heuristic pressure on the nodes within circularity = 2/23 + 55/230 + 90/230 = 165/230

Although the example used in explaining the method of computation involved a circularity in the middle of the heuristic map, the computation for cases with circularity at the bottom, or at the top, are similar to this.

In this section the main concepts developed in the heuristic study, the computation conducted on the data and assumptions made have been explained with the help of the pilot study data. In the next section are presented the results of the main study.

10.4 Field study

This section seeks to describe how respondents were recruited and presents an overview of response rates and usable data.

Recruitment of respondents

For the main study the author sought to obtain at least 100 managerial respondents. The author managed to negotiate access for research purposes to four different groups of managers.

Method 1: Accountancy Conference. Durham University was the venue for an academic accountants' conference. The author's contact with the organiser elicited permission for forwarding the questionnaire to some of the conference participants. Altogether around 60 individuals had enrolled for this conference and the research instrument was forwarded to 30 of them. The potential respondents addressed by this method received the research instrument along with material on the conference that was being sent to them through the Royal Mail. The response rate from this method was 50%. However, only 13 completed questionnaires provided useable data for all three main research items (those on pages 2 and 3 of the research instrument).

Method 2: Chemistry Conference. A Chemistry Conference was held in Durham and the author was granted permission by the organising body to circulate at the meeting and by direct contact to recruit respondents. Only managerial position holders from industry were recruited. The research instrument was given out to 40 potential respondents of whom 35 returned the completed forms. Of these 35, 29 were useable for all three research questions.

Method 3: Post Experience Course attendants. Permission was granted by the Director of Post Experience courses, Durham University Business School, to recruit respondents from among the managerial employees attending short post experience courses at the Business School. The participation of the course attendants to the heuristic study was on a voluntary basis. Of the 65 agreeing to participate 60 returned the completed research instrument. This method produced 55 completed forms useable for all three research questions.

Method 4: Business School graduates. The register of Business School graduates, discussed earlier in connection with the survey on managerial job design practices (Chapter 6) was used to circulate 50 research instruments, with a covering letter, through the Royal Mail. From this batch 28 completed forms were returned, of which 22 were usable for all three research questions.

The table of Figure 10.13 summarises the contact rates, response rates and the usable response rates for the four methods of recruitment used in the study.

Method	Contact rate	Response rate	Usable response rate
1. Accountancy Conference/post	30	50% (= 30)	43% (= 13)
2. Chemistry Conference/self contact	40	87% (= 35)	73% (= 29)
3. DUBS course attendants/ self contact	65	92% (= 60)	84% (= 56)
4. BGA guide/post	50	56% (= 28)	44% (= 22)
Totals/averages	185	75% (=138)	64% (=120)

Figure 10.13: Summary of response rates

For the study into managerial heuristics the choice of participants was difficult to make. Essentially, given the author's concern for job design, any managerial position holder would suffice. By recruiting respondents with a variety of backgrounds the author attempted to build heterogeneity into the collected data so as to permit generalisations.

Although the table of Figure 10.13 presents the usable response rate on the basis of the correctness of the respondents' pursuance of the instructions for all the three research questions, completed questionnaires where instructions on one or more items were adhered to are used for partial analysis, as appropriate

10.5. Data analysis - main study

For the sake of conciseness as well as to keep within the primary purpose of the thesis, no attempt will be made to relate the population, demographic, characteristics to the variations in heuristic data. The description of the demographic characteristics is presented in Appendix 10, where the five tables present this data in classified order. The author is reasonably confident that the data is free of biases of the sort that might make it unrepresentative of the managerial job holder class.

Certain interpretations are presented along with the data but certain others, which are related not to a specific piece of data but are the outcome of the total view, are left for the next section which is a discussion on the method of heuristics.

10.5.1. The pressure

In this section is presented the results of static and heuristic pressures.

The static pressure

The histogram of Figure 10.14 presents the data on the importances attached to the 10 constructs by the 120 study participants themselves. The method of computing means involved assigning grades 1, 2 and 3 to lowest, intermediate and highest importances. In the presentation the constructs are ordered from left to right according to decreasing value of their computed mean importance.

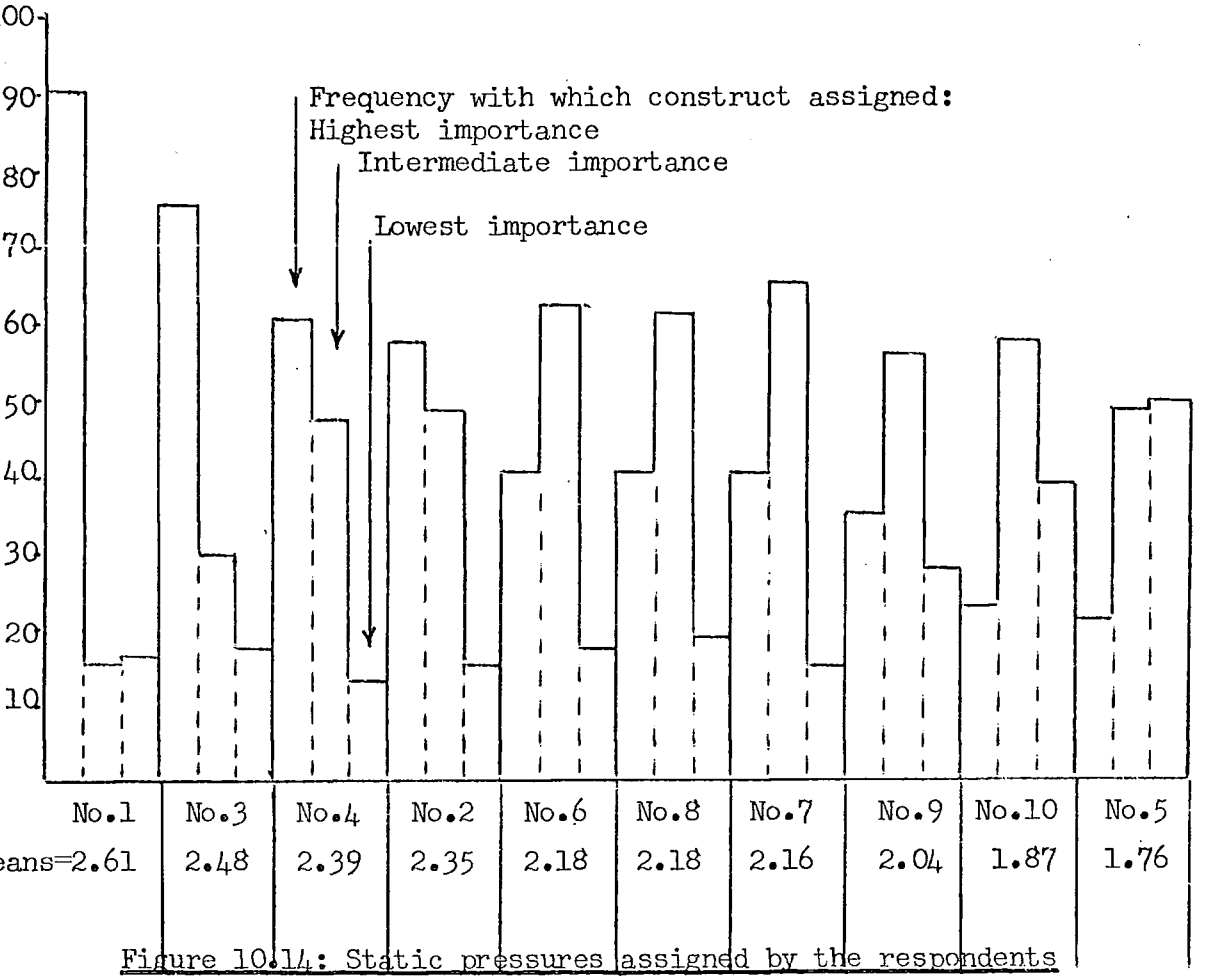


Figure 10.14: Static pressures assigned by the respondents

The histograms of Figure 10.15 present the means for the standardised static pressures.

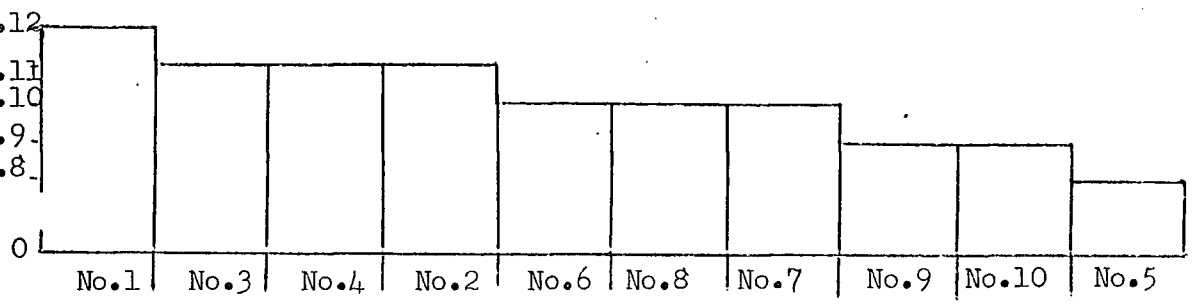


Figure 10.15: Means of the standardised static pressures

The computation procedure for the data in Figure 10.15 was as follows:

Step 1: Compute the standard static pressure for each construct, for each case

Step 2: Construct wise summation of the SSP obtained in step 1, through all 120 cases.

Step 3: Divide by 120 the value obtained, for each construct, in Step 2.

The heuristic pressure

The histogram of Figure 10.16 presents the distribution of average heuristic pressure on the 10 constructs researched. The procedure adopted for computing the average heuristic pressure is as follows:

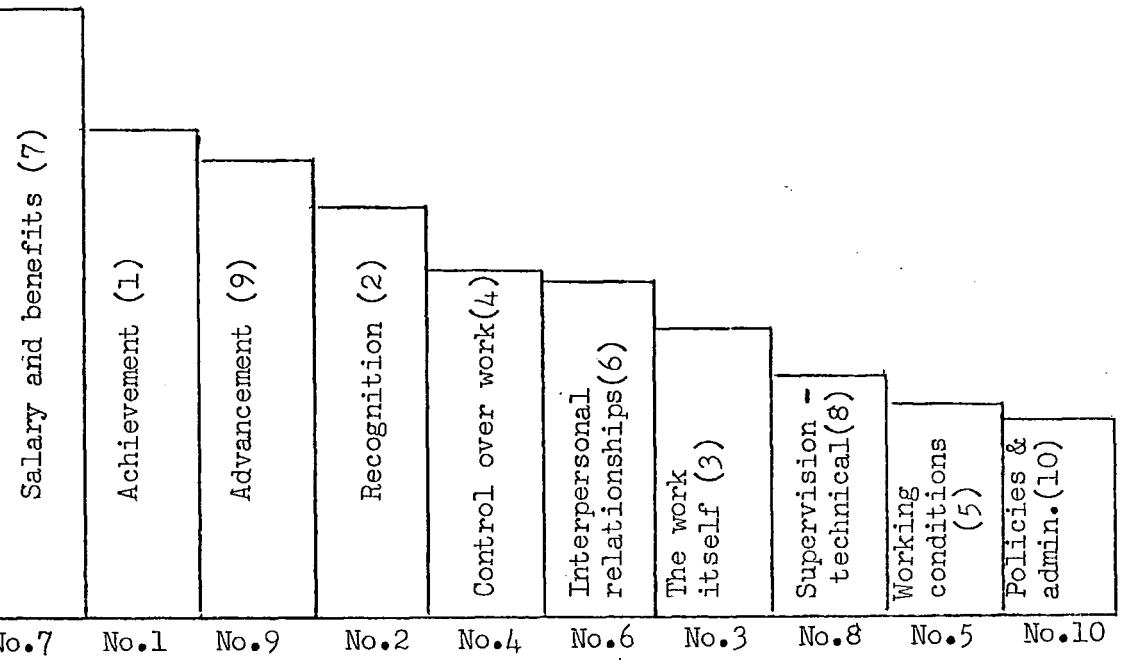


Figure 10.16: The average heuristic pressures on the 10 constructs

Step 1: For each case (study participant) compute the heuristic pressures on the 10 constructs

Step 2: Compute for each construct, through all the cases, the sum of the heuristic pressures.

Step 3: Divide the sum, computed in Step 2, by 120 (the total number of cases)

An interpretation for the vertical axis of Figure 10.16 is: 'attributed importance derived by the method of heuristics'. Note that in this figure the constructs

have been ordered, from left to right, according to decreasing average heuristic pressures.

Contrasting the histograms of Figures 10.15 and 10.16 it is noticeable that while construct 2 remains in the 4th position in both sets of histograms, constructs 5 and 10 interchange position such that whereas for static pressure constructs 10 and 5 occupy 9th and 10th positions respectively, in the heuristic pressure diagram they occupy positions in the reversed order. With respect to constructs 1 and 6, the order of importance goes down, by one in each case, when these are positioned according to heuristically derived values as compared with the statically derived values. With respect to the other 5 constructs, the shifting in the ordered positions is more extreme.

The ratios of the heuristic pressures between the 10 constructs depicted in Figure 10.16 generate a proportion profile of the heuristic pressure distribution , for the sampled population. Similarly, the earlier diagram on SSP, Figure 10.15, is the proportion profile of the SSP distribution . For the moment these profiles are being defined; later, in Section 10.6, these will be used.

The diagrams of Figure 10.17 to 10.26 give the within construct distribution of heuristic pressures for the ten constructs whose average heuristic pressures are plotted in Figure 10.16. The computation procedure adopted for deriving the values depicted in these ten diagrams was as follows:

Step 1: Assign ranks to the heuristic pressures on the 10 constructs, for each case. The rank determined the position of the weight .

Note: Where a tie occurred between 2 (or more) constructs, the weight was distributed, for the constructs concerned, proportionately among the tied ranks (positions).

Step 2: Summation, for each construct, over the whole study population.

The curves of the type depicted in Figure 10.17 to 10.26 are of the type which would be necessary for stimulating heuristic pressures.

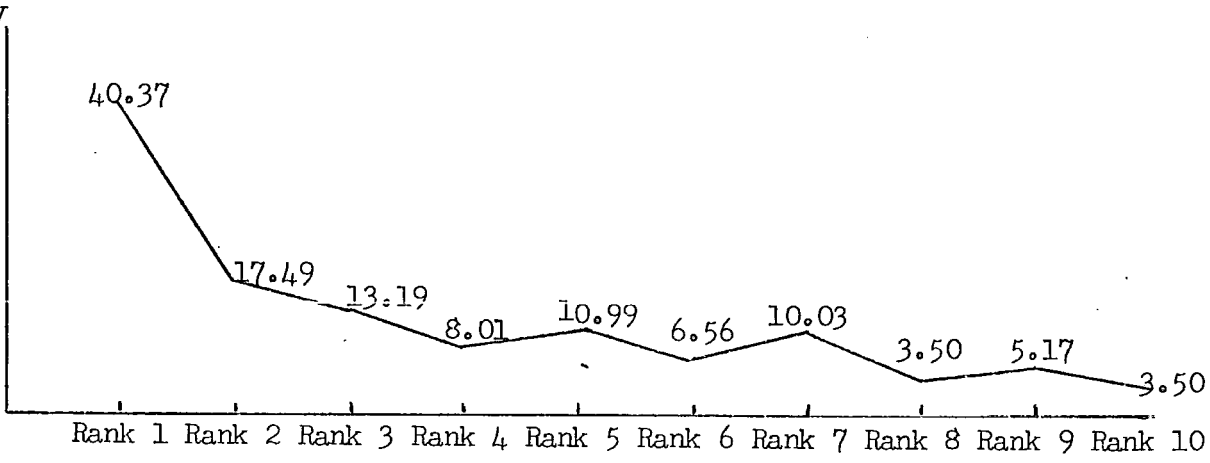


Figure 10.17: Construct 7 (salary and Benefits) according to rank for the 120 cases

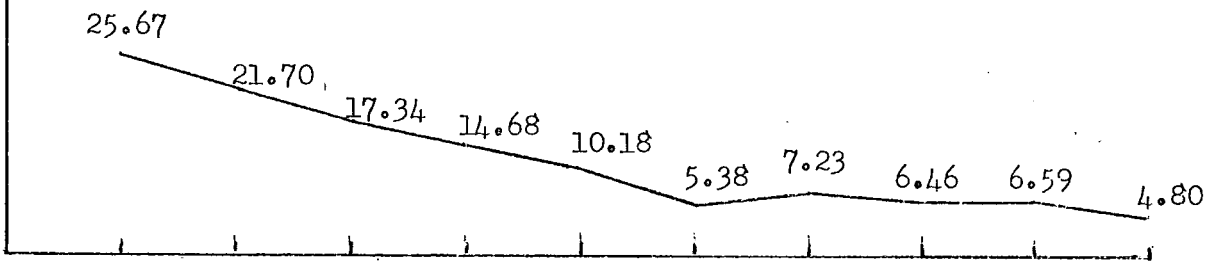


Figure 10.18: Construct 1 (achievement) according to rank for the 120 cases

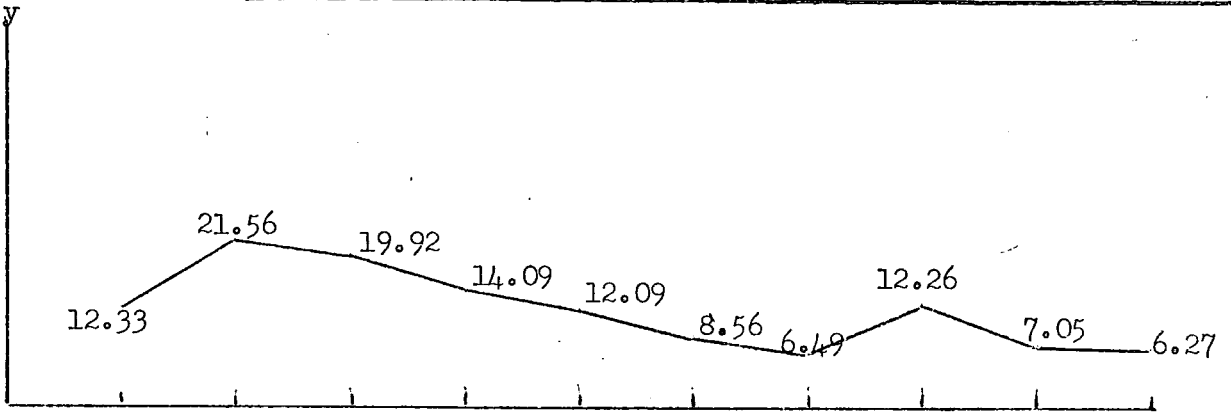


Figure 10.19: Construct 9 (advancement) according to rank for the 119 cases

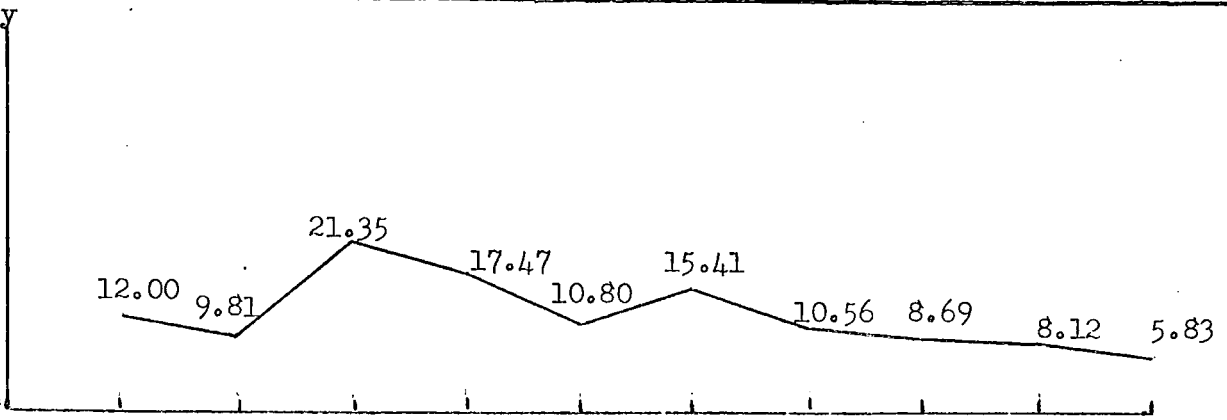


Figure 10.20: Construct 2 (recognition) according to rank for the 120 cases

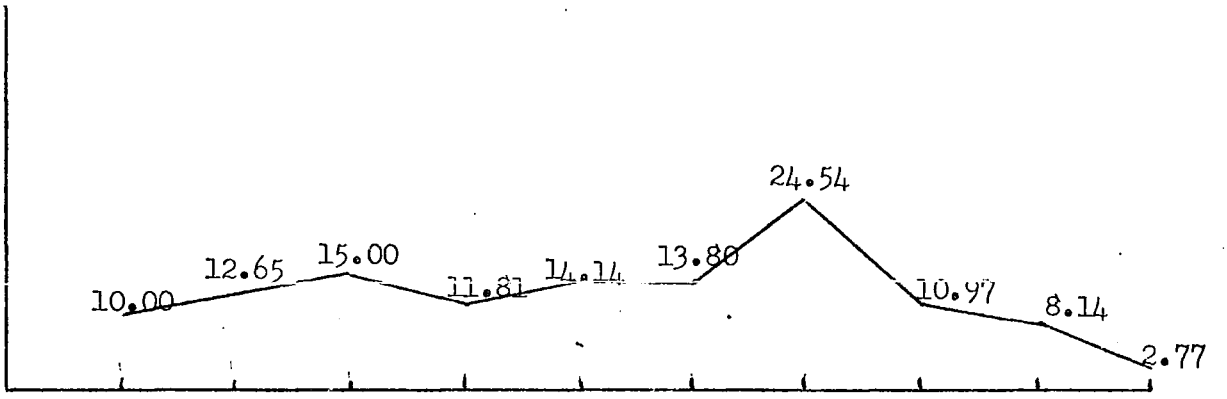


Figure 10.21: Construct 4 (control over work) according to rank for the 120 cases

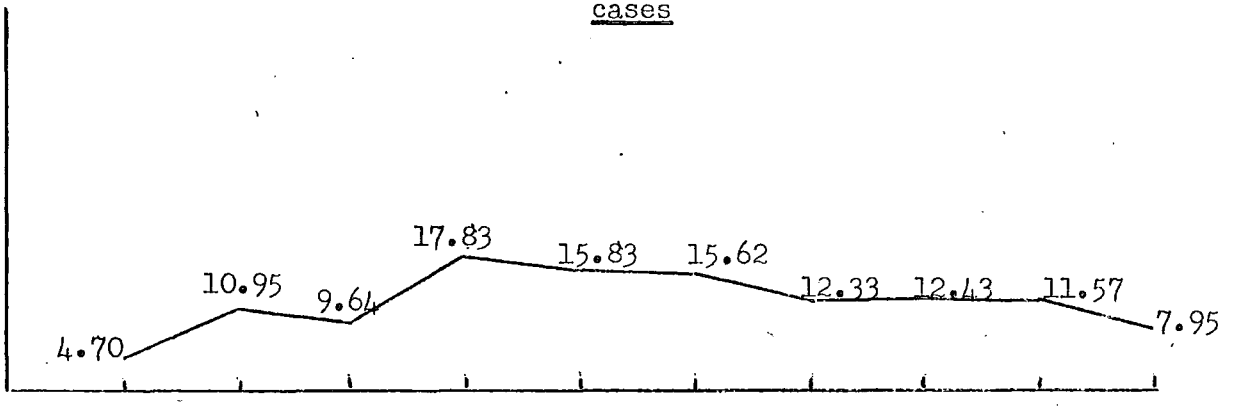


Figure 10.22: Construct 6 (interpersonal relationships) according to rank for the 119 cases

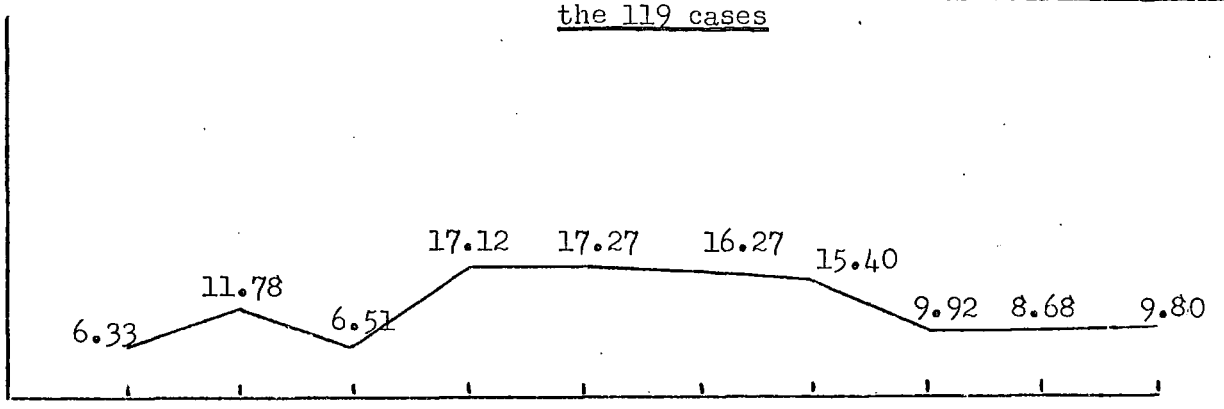


Figure 10.23: Construct 3 (the work itself) according to rank for the 120 cases

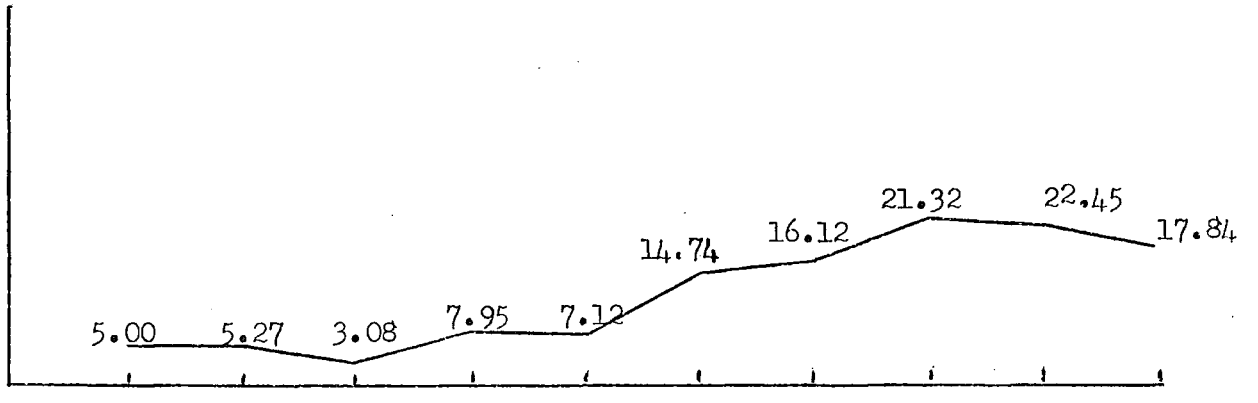


Figure 10.24: Construct 8 (supervision-technical) according to rank for the 120 cases

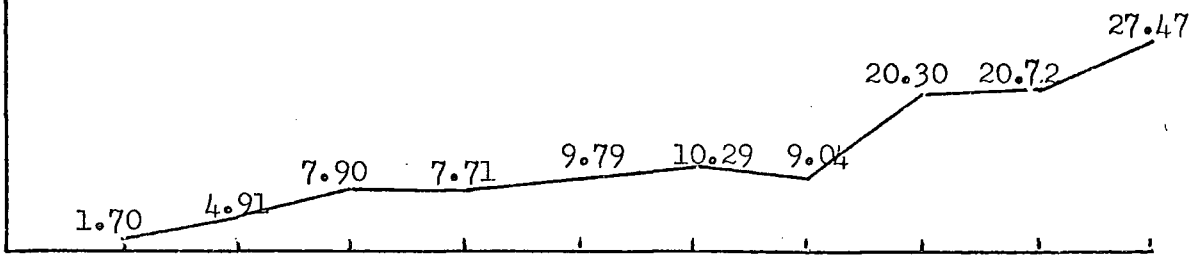


Figure 10.25: Construct 5 (working conditons) according to rank for the 120 cases

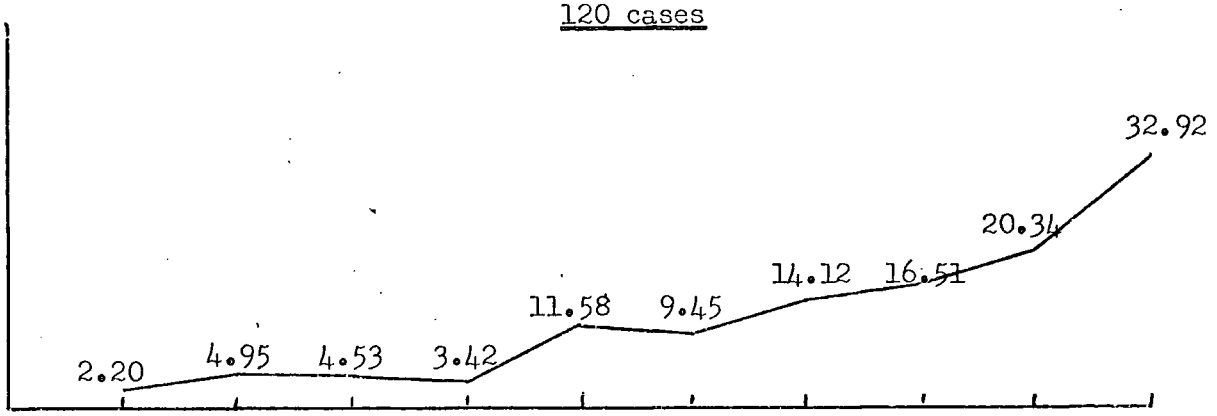


Figure 10.26: Construct 10 (policies and admin.) according to rank for the 120 cases

Since the presence of high heuristic pressure indicates the occurrence of the construct on the higher end of the heuristic map, these ten diagrams together present a visual display of pressure transmission, from the predetermining constructs to those higher up the chain. For example, consider the three constructs displayed in Figures 10.17, 10.21 and 10.26. While the higher frequencies associate with lower ranks for policies and administration, the higher frequencies occur in the mid-ranks for control over work, and the higher frequencies occur with higher ranks for salary and benefits, thus visually depicting a wave like motion from the right to the left (in the diagrams shown).

Mathematical artefact and insight

Note that the area under the ten curves being discussed comes, in each case, to 120 (or 119 in two instances). This arises due to the mathematical artefact of ranking: each construct is ranked, once for each case, according to the heuristic pressure on it. The graphs drawn, from ranked data, while bringing out the transmission aspect, conceal the differentiated pressure loading on the constructs discussed with reference to Figure 10.16.

The diagram of Figure 10.27 shows, for the three constructs discussed in

the foregoing paragraph (i.e. salary and benefits, control over work, and policies and administration), the distribution of heuristic pressures controlling for both the profile and average pressure. Note that the diagram contains smoothed curves, and is not a scale drawing. Its purpose is simply to depict a concept.

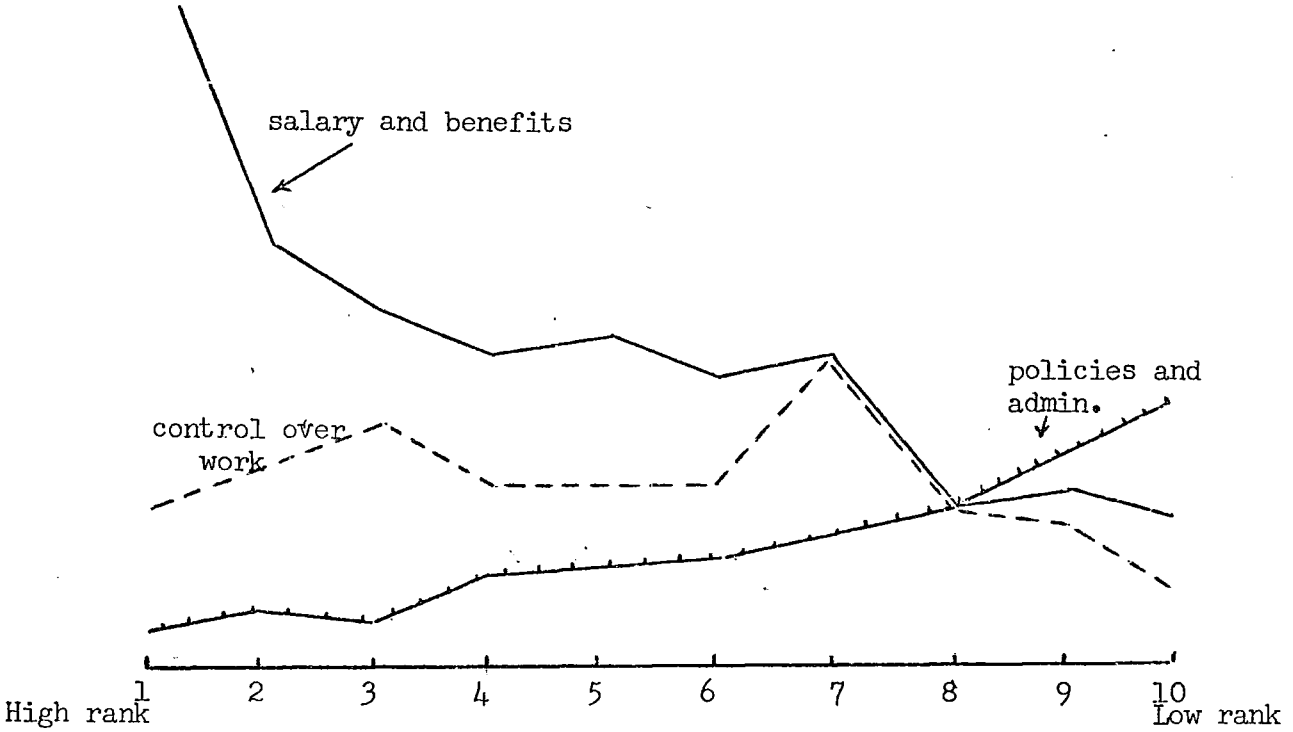


Figure 10.27: Maintaining the pressure profile by rank but adjusting for (average pressure) loading for 3 constructs

10.5.2. Connectivities between constructs

In this section is discussed the connectivity between the constructs as derived from the data. First the basic data is reported and then, through two schemes for data consolidation, two models of heuristics are derived.

Connectivity data

Figures 10.28 and 10.29 summarise the connectivity data.

Figure 10.29 presents the data on reported 'unconnectivity', or isolates. The order in which the constructs are presented in this figure is derived from that of Figure 10.16 which ordered the constructs according to the average heuristic pressure compulted. The histograms in Figure 10.29 show the total number of times the various constructs were reported as isolates. For example, construct number 5 (working conditions) was reported as an isolate 39 times, i.e. by 39, of the 120, respondents. Within each frequency measure is further shown the composition according to the importance attached to the constructs, within the isolate class, by the respondents. For example, whereas the total of

from \ to	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10	Total From	Total To	Total Sum
No.1		(50)	9	(14)	3	(17)	(40)	4	(51)	5	193	248	441
No.2	(14)		4	5	2	(14)	(17)	1	(36)		93	107	200
No.3	(37)	(13)		(25)	6	7	(20)	2	4	3	117	106	223
No.4	(53)	3	(15)		1	5	4	4	8	2	95	117	212
No.5	(38)	4	8	4		3	4		3	1	65	65	130
No.6	(29)	(23)	(13)	(19)	6		(14)	7	(18)	1	130	104	234
No.7	9	2	3	1		7		2	3	2	29	168	197
No.8	(33)	6	(15)	11	7	(39)	2		1	10	124	26	150
No.9	6	3	10	10	4	6	(45)			3	87	142	229
No.10	(29)	3	(29)	(28)	(36)	6	(22)	6	(18)		177	27	204

Figure 10.28: Frequencies of connectivity as reported by study participants (120)

Notes: 1. For four cells ((2, 10), (5,8), (7,5) and (9,8)) the reported frequency was nil.

2. Frequencies of connectivity reported by more than 10% of the respondents are encircled by a small circle.

3. Frequencies of connectivity reported by more than 20% of the respondents are circled by the larger circle.

4. As a consequence of Notes 2 and 3, frequencies having (a) any circle (one or two) are those reported by at least 10% of the respondents, (b) two circles are those reported by at least 20% of sample.

For explanation see following page.

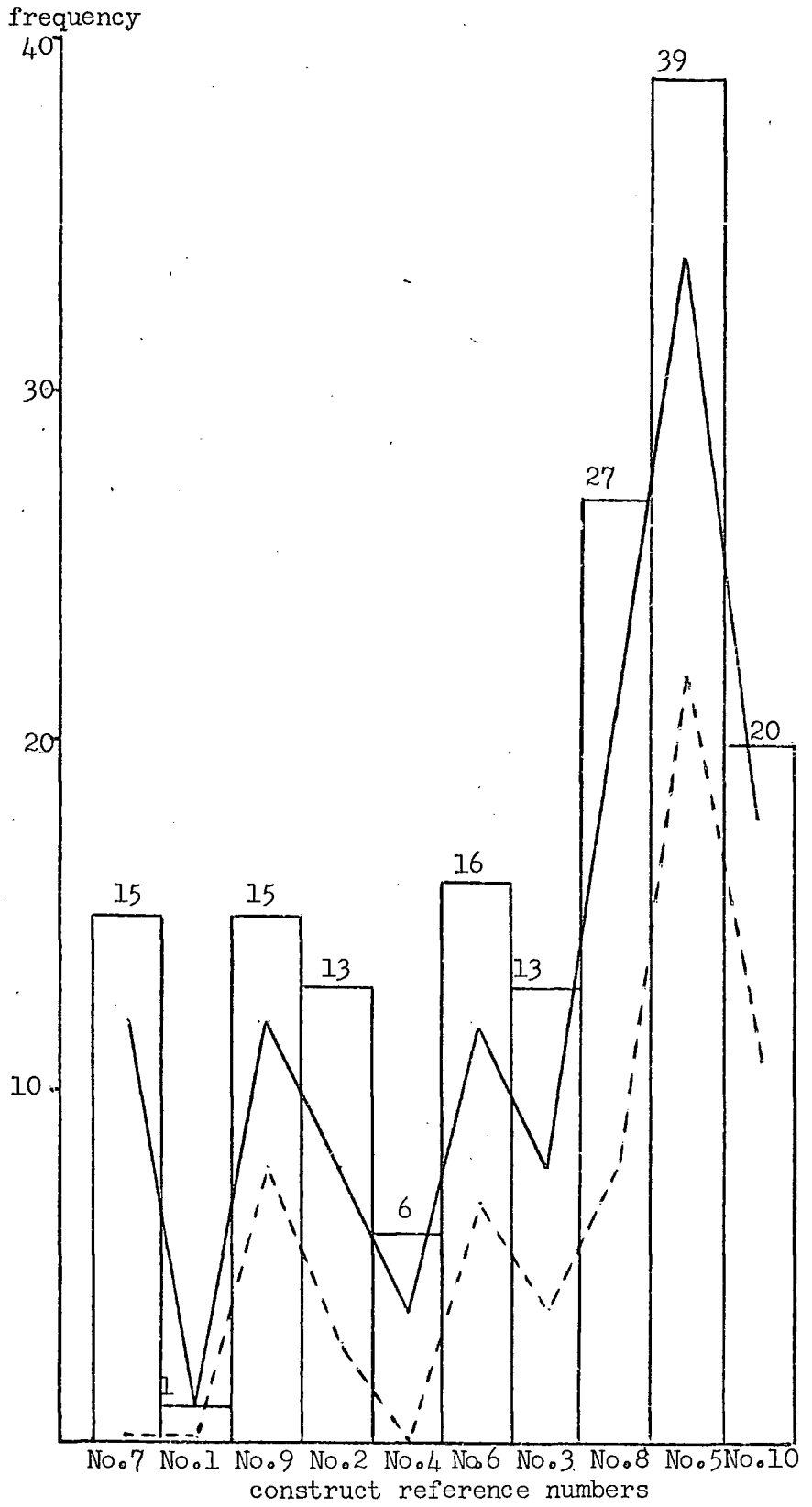


Figure 10.29: Frequency of constructs reported as isolates by 120 study participants

Note to Figure 10.29

The size of the histogram bar indicates the total number of times the construct was an 'isolate'. The numbers on the top of each bar give exact values from data.

The information attached to the isolates is also shown in this diagram. The two curves split each bar into 3 sections, each signifying a different grade of importance.

The lowest portion of each bar (separated by the dotted line) represents the number of respondents assigning grade 1 to the construct. The middle portion (delimited by the two curves) represents the number of times the isolated construct was assigned the importance grade of 2. The top-most part within each bar represents the number of times the isolate was graded 3 in importance.

isolate reportage for construct 5 is 39, of this number 22 times the construct was given low importance (graded 3), 12 times it was given intermediate importance (graded 2) and 5 times it was given the highest importance (grade 1).

Comparing the frequency of the occurrence of isolates with the average heuristic pressure, whereas no patterns emerge on a construct-by-construct basis, overall, data suggests that those constructs which had lower heuristic pressures on them also occur more frequently as isolates. Corresponding deductions with regard to constructs having high average heuristic pressure cannot be made from the present data.

Figure 10.28 presents the connectivity data in a from construct-to-construct tabular manner. An explanatory example will make the rest of the table self-readable. Along the vertical axis are the connectivity starting points, i.e. the predetermining constructs; along the horizontal axis are the constructs which are predetermined in dyadic relationships. Thus, in the table, the contents of cell (1, 2), i.e. the number 50, shows that 50 of the respondents indicated construct 1 to be a predeterminant of construct 2. On the other hand the contents of cell (2, 1) i.e. the number 14, shows that 14 respondents indicated that construct 2 predetermines construct 1. The circles, one or two, surrounding numbers in certain cells, are explained in the notes below Figure 10.28. The last three columns of the table in Figure 10.28 show the totals for the connectivity of each construct: the first of these columns shows the number of times the construct predetermines all the other constructs: the second column shows the number of times each construct itself was predetermined by all the other constructs; the third column gives the sum of the preceding two columns.

A special class of connectivity would be where the construct is linked to one or more other constructs but its position in the heuristic map is represented by terminal nodes, either starting or end terminals. The table of Figure 10.30 shows the frequencies with which the ten constructs were so linked. The data indicated that 4 of the constructs were more likely to occur with a possibility of at least 3 to 1, in a specific terminal position. For two of these constructs (salary and benefits and promotion) the bias in their position of occurrence

favours the end-terminal position. For the other two (technical supervision, and policies and administration) bias favours their occurrence as starting-terminals.

Construct number	Node as starting terminal	Node as end-terminal
1	23	24
2	26	34
3	36	25
4	36	28
5	28	26
6	36	28
7	10	82
8	74	8
9	14	41
10	76	8

Figure 10.30: Frequency of occurrence of constructs at the beginning or end of chains

Models of connectivity

The basic connectivity data presented in Table 10.28 shows that some of the connectivities were perceived by small number of respondents. For example, the connectivity between constructs 8 and 9 (cell (8,9)) was perceived by only one respondent. Of the total of 90 connectivities possible from the ten constructs, only 4 were such as not to be reported at all. All the others, as evidenced from the table of Figure 10.28, were reported to exist, although a large proportion were infrequently envisaged by the respondents.

In this section two models of connectivity will be derived. Each model is based on a data reduction/consolidation scheme which will also be presented in each case.

Connectivity Model 1

The particular data reduction strategy adopted here is to consider only those connectivities reported by at least 10% of the participants. With reference to the table of Figure 10.28, all frequencies higher than 12 are

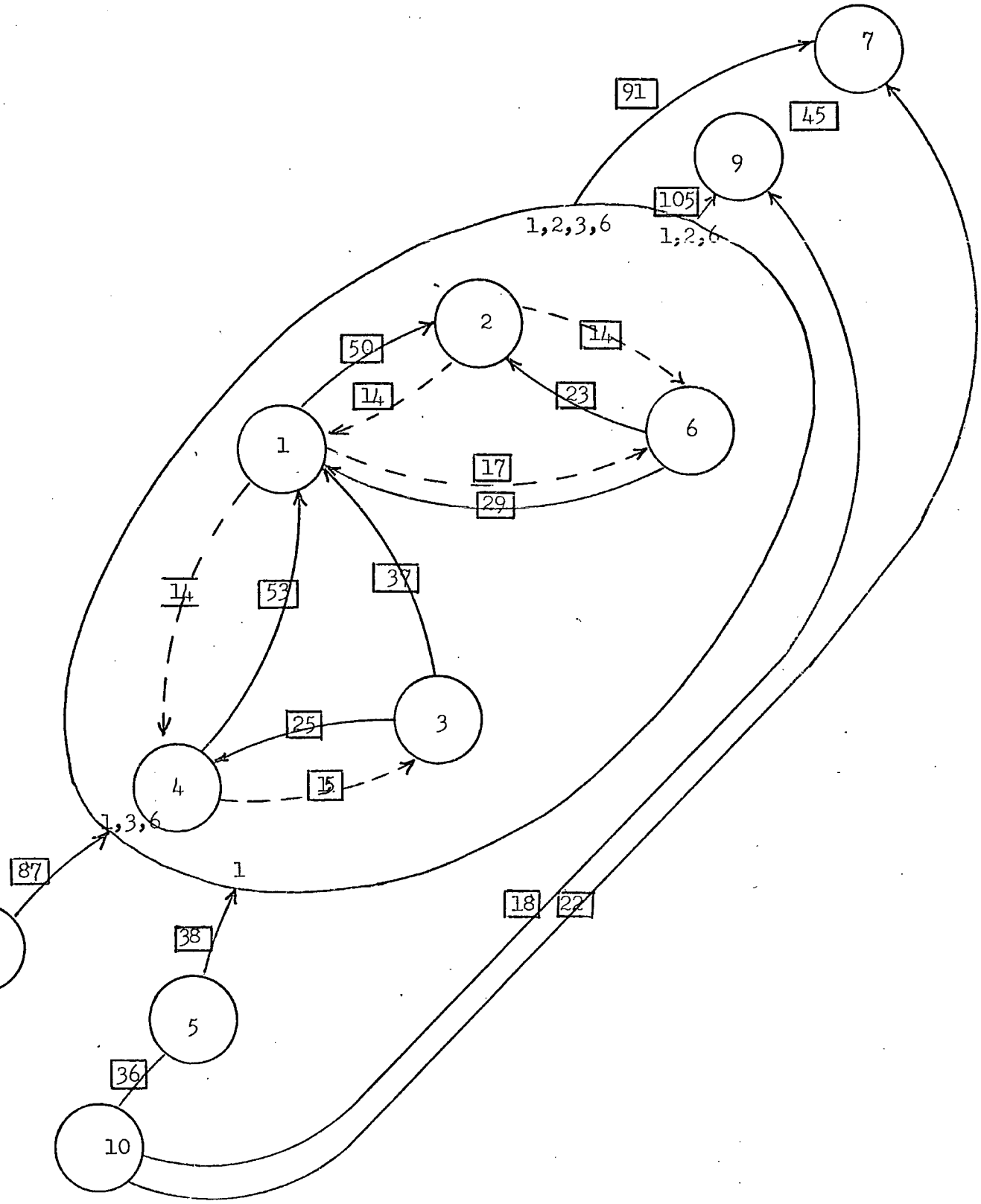


Figure 10.31: Model connectivity

Note: Where two way connectivities exist, between pairs of constructs, i.e. A to B and B to A, the dominant one is shown by continuous arrows and the weaker (of the two) by broken arrows.

indicated by having a circle (one circle or two circles) around them.

On the basis of below 10% frequency cut-off, note that five of the connectivities, indicated by the following 5 pairs of cells:

1. (2, 6) and (6, 2)
2. (1, 2) and (2, 1)
3. (1, 6) and (6, 1)
4. (1, 4) and (4, 1)
5. (3, 4) and (4. 3)

are of the two way type, that in the single person heuristics were precluded by instructions to study participants i.e. these are of the types A predetermines B and B predetermines A. So, while in single person heuristics such type of connectivity was excluded, it has become introduced into the data, currently being considered, due to aggregation over the population of study participants. Such two way connectivity between pairs of constructs, of course, prevents the drawing of normal pictorial diagrams of the kind used in presenting the single person heuristics for the pilot study participants. However, the special pictorial diagrams, used for cases where circularity arose, will be used to show the connectivity between the constructs, according to the model being considered. Note that in the discussion of single person heuristics, circularity was discussed in terms of the involvement of 3 or more constructs in an endless loop. The type of connectivity being discussed here, arising due to summarisation over the whole study population, could thus be viewed as a degenerate case of circularity, emerging from a pair of constructs being involved in an endless loop.

The diagram of Figure 10.31 shows the connectivity, between the constructs, derived according to Model 1. In this diagram the five constructs involving a dyadic circularity have an enclosure drawn around them. Within this enclosure, the only unreciprocated connectivity, in the sense of the absence of dyadic circularity, is that between the constructs 3 and 1. Construct 3 is placed within the enclosure due to its two way connectivity with construct 4.

In the diagram of Figure 10.31 the frequency of connectivity between constructs is written in the rectangular boxes on the arrows showing predetermination. The constructs themselves are represented by circular nodes. The notation adopted to show the connectivity between the nodes within and outwith

the enclosure will be explained via example: Node 8, outwith the enclosure, is connected to nodes 1, 3 and 6, within the enclosure; the total connectivity of 8 with all these nodes within the enclosure is 87. Notation similar to this has been adopted for depicting nodes outwith the enclosure being predetermined by nodes within.

Heuristics based on Model 1 connectivity

Referring back go Figure 10.16 which presents heuristic pressures derived from the same data as the connectivity model under discussion, the three constructs (policies and administration, working conditions and supervision - technical) which have the three lowest pressures on them, being at the lower end of the connectivity model, could be regarded as having linkages such that only the low aforementioned heuristic pressures may be derived, through appropriate adjustment of 'importance', the second parameter for calculating heuristic pressures.

Similarly, the positioning of nodes representing the constructs 7 and 9, is such that the high pressures given on these (see Figure 10.16) is likely from the connectivity derived in Model 1 and shown in Figure 10.31.

However, the derivation of heuristic pressures, from the connectivities of Model 1, for the remaining constructs, i.e. constructs 1, 2, 3, 4, and 6, would lead to the pressures on these constructs being equal. And this would be contrary to the profile of heuristic pressures presented in Figure 10.16 where pressures on constructs 1 and 3 differ not only in rank but in magnitude as well.

Thus the Model 1 connectivity, derived by fixing the cut-off point at 10% of sample, although capable of certain deductions is too rough for detailed work. An improvement on this model emerges in the Model 2 connectivity which will now be discussed.

Connectivity Model 2

Model 2 data reduction strategy is based on considering those connectivities reported by at least 20% of the participants. With reference to Figure 10.28, those meeting this criteria are indicated by two circles on the frequency values. For ease of reference the connectivities meeting the criteria are listed in the table of Figure 10.32.

From	To	Frequencies
1	2	50
1	7	40
1	9	51
2	9	36
3	1	37
3	4	25
4	1	53
5	1	38
6	1	29
8	1	33
8	6	39
9	7	45
10	1	29
10	3	29
10	4	28
10	5	36

Figure 10.32: Connectivities considered in Model 2

The diagram of Figure 10.33 shows the connectivities derived from Model 2 in a pictorial form.

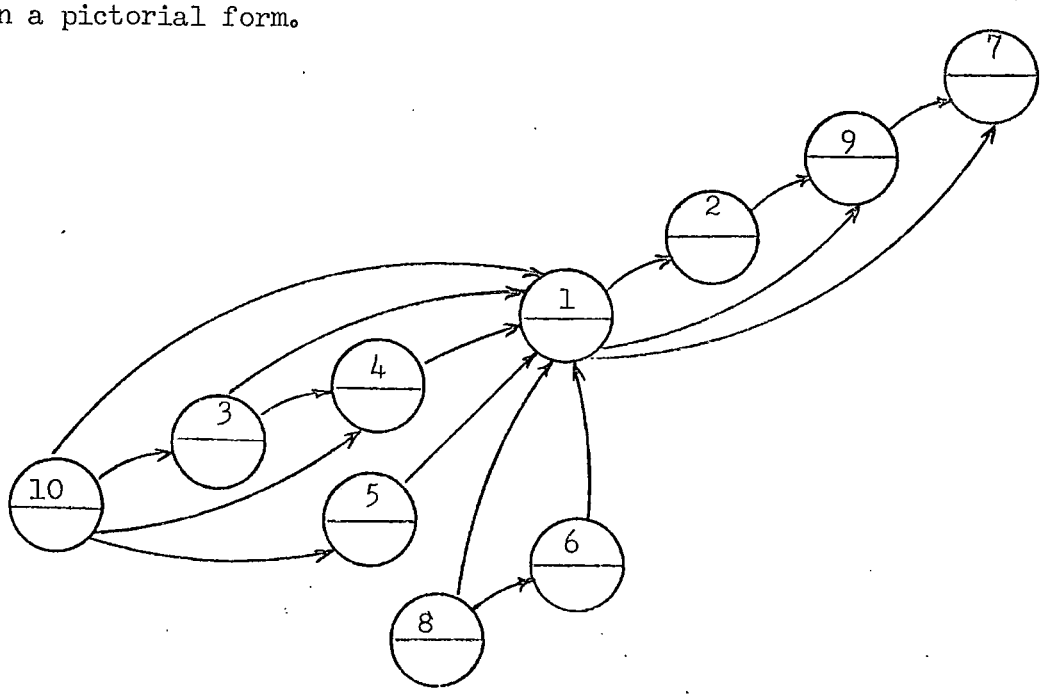


Figure 10.33: Model 2 Connectivity

As is evident from this figure no circularity exists between any pair of nodes.

Heuristics based on Model 2 - connectivity: a simplified computation

Using the data on the means of the standardised static pressure given in Figure 10.15, and the connectivity shown in Figure 10.32 the computed values for the heuristic pressures are shown in Figure 10.34.

Construct No.	7	1	9	2	4	6	3	8	5	10
Heuristic pressure	1.00	0.76	0.69	0.36	0.25	0.13	0.12	0.10	0.10	0.09

Figure 10.34: Heuristic pressures on constructs: computation based on Model 2 connectivity and standardised static pressures

A comparison of the computed heuristic pressures of Figure 10.34 and the earlier presented data aggregate presented in Figure 10.16 shows rank alignment of heuristic pressures on the constructs. Notwithstanding the proviso added in the next subsection, the connectivity of Figure 10.33 with the computed heuristic pressuresof Figure 10.34 will be referred to as the common heuristics.

Comment on the acceptability of derived connectivity

In presenting the two models of connectivity based on simple strategies of data reduction, an attempt was made to show how models may be formed and accepted or rejected on the basis of the degree to which the heuristic pressures computed therefrom correspond with the profile derived for the heuristic pressures from aggregation. Thus the process of deriving an acceptable model could be regarded as iterative. Iterative techniques can be simulated faster on a computer; and computer-based programmes for producing solutions would have the added advantage of possessing the capability of handling different datas. Further these programmes could be made sophisticated to perform computations that in the simplified calculations presented to convey the concepts were not given consideration in the foregoing discussions. Two such improvements could be:

1. In the derivation of heuristic pressures from Model 2 connectivity, the pressure flow from one node to several others was not matched for the frequency of reported occurrence. To explain this, consider the connectivities shown in Figure 10.33 for Model 2. This data shows the node

representing construct 1 to be connected to nodes representing constructs 2, 7 and 9, respectively 50, 40 and 51 number of times. In the simplified calculation of heuristic pressures, however, the simplifying assumption of 1/3 to each node was made. A more sophisticated computation, using the pressure flow to correspond with the connectivity, i.e. partitioning the flow from node 1 to nodes 2, 9 and 7 to be in the ratios 5 : 4 : 5, could produce more realistic solutions.

2. Given that some constructs occur more often as isolates, some others more often as starting terminals and some others more often as end terminals a new concept - that of 'retentivity of pressure' - may need development. The concept of retentivity, applicable to the derivation of common heuristics of the type derived in Model 2, implies that not all heuristic pressure occurring at a construct may be transmitted to constructs predetermined by it.

As to whether or not the concept of retentivity is necessary can only be found out by attempting to fit a series of connectivity models iteratively to the profile of aggregated heuristic pressures.

In this area further research, based on computer runs, is necessary.

10.5.3. Comparison of Herzberg's results with the Herzberg-data from this study

Herzberg split the 10 factors into two groups on the basis of whether the factor predominantly elicited "high" or "low" experiences. The two groups, labelled motivators and hygiene, comprised the following factors:

Motivators - achievement, recognition, work itself, responsibility, advancement

Hygiene - company policy and administration, supervision, salary, interpersonal relations, and working conditions

It is interesting the compare the author's results with those documented by Herzberg. Figure 10.35 presents in tabular form the data on the association of the 10 factors with 'happy' and 'unhappy' situations, described by the study respondents. This data, while sharply delineating all the five Herzberg motivators as having stronger association with, to borrow Herzberg's nomenclature, "high" experiences, segregates only 4 of the hygiene factors on the basis of

association with "low" experiences.

Construct number	Frequencies of association in						Row total (% of grand total)
	Unhappy situation (% of row total)		(% of grand total)	Happy situation (% of row total)		(% of grand total)	
1	18	(14%)	((1.96%))	115	(86%)	((12.50%))	133 ((14%))
2	21	(21%)	((2.28%))	77	(79%)	((8.37%))	98 ((11%))
3	52	(40%)	((5.65%))	78	(60%)	((8.48%))	130 ((14%))
4	36	(35%)	((3.91%))	67	(65%)	((7.28%))	103 ((11%))
5	28	(60%)	((3.04%))	19	(40%)	((2.07%))	47 ((5%))
6	66	(56%)	((7.17%))	52	(44%)	((5.65%))	118 ((13%))
7	27	(39%)	((2.93%))	43	(61%)	((4.67%))	70 ((8%))
8	51	(65%)	((5.54%))	27	(35%)	((2.93%))	78 ((8%))
9	18	(28%)	((1.96%))	47	(72%)	((5.11%))	65 ((7%))
10	64	(82%)	((6.95%))	14	(18%)	((1.52%))	78 ((8%))
Column totals			((41.39%))			((58.58%))	920 ((=100%))

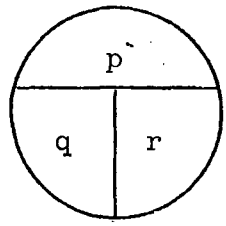
Figure 10.35: Herzberg-like data from author's study

The factor which was classified as Hygiene, by Herzberg, on the basis of its association with "low" events, but which from the data in this study would be classified as a motivator, is salary

Notwithstanding this difficulty with the classification of one factor, the fact that the 9 others could be classified by the schema adopted by Herzberg, shows the stability over time of individual attitudes to narrating experiences-in-job. And this is especially note -worthy on account of the fact that the author's study was conducted more than two decades after that of Herzberg, in a different cultural environment and in a different economic atmosphere: Herzberg conducted his study in the USA, at a time of full employment while the author's study took place in the United Kingdom at a time when unemployment exists and the likelihood of further increases in unemployment seem high. This last mentioned fact, together with the currently experienced high inflation rates, in fact, may in part explain the deviation in the classification of 'salary' between Herzberg's original study and the one currently being reported.

Analysis of high and low experiences on the common heuristic map

The diagram of Figure 10.37 is drawn by superimposing the data on "low" and "high" experiences on the Model 2 connectivity arrived at earlier (see Figure 10.33). In this diagram each node is split into three parts with a number in each part. These three numbers will now be explained with the help of the diagram in Figure 10.36 below.



p = construct reference number
q = frequency of "low" experiences associated with construct p
r = frequency of "high" experiences associated with construct p

Figure 10.36: Explanation for the notation in Figure 10.

Although the connectivity of nodes in Figure 10.37 is the same as that derived in Model 2 the positioning of the nodes in this latter figure has special significance. The node representing construct 1 is positioned first and at the centre of the diagram. The other nodes are subsequently positioned such that each level of predetermination and the connectivities (and major groups of connectivities) are clearly distinguishable. To maintain distinction in the levels of predetermination, concentric circles (centred on node 1) are drawn. This diagram will be used for two separate analyses of the "low" and "high" incidences.

Analysis: outcomes and antecedents of success in job

The diagram of Figure 10.37 indicates that the constructs associated with outcomes of success in job are 2, 9 and 7. The concept of 'product' and 'by-product' discussed earlier is for the moment not important. The concept of import here is that these constructs (2, 9 and 7) are the outcomes of success - no matter what the importance attached to them, vis-a-vis success in job, by any one individual.

Similarly, the predeterminants of success in job are the six constructs: 3, 4, 5, 6, 8 and 10.

In the discussion so far, thus, two types of variables have been delineated:

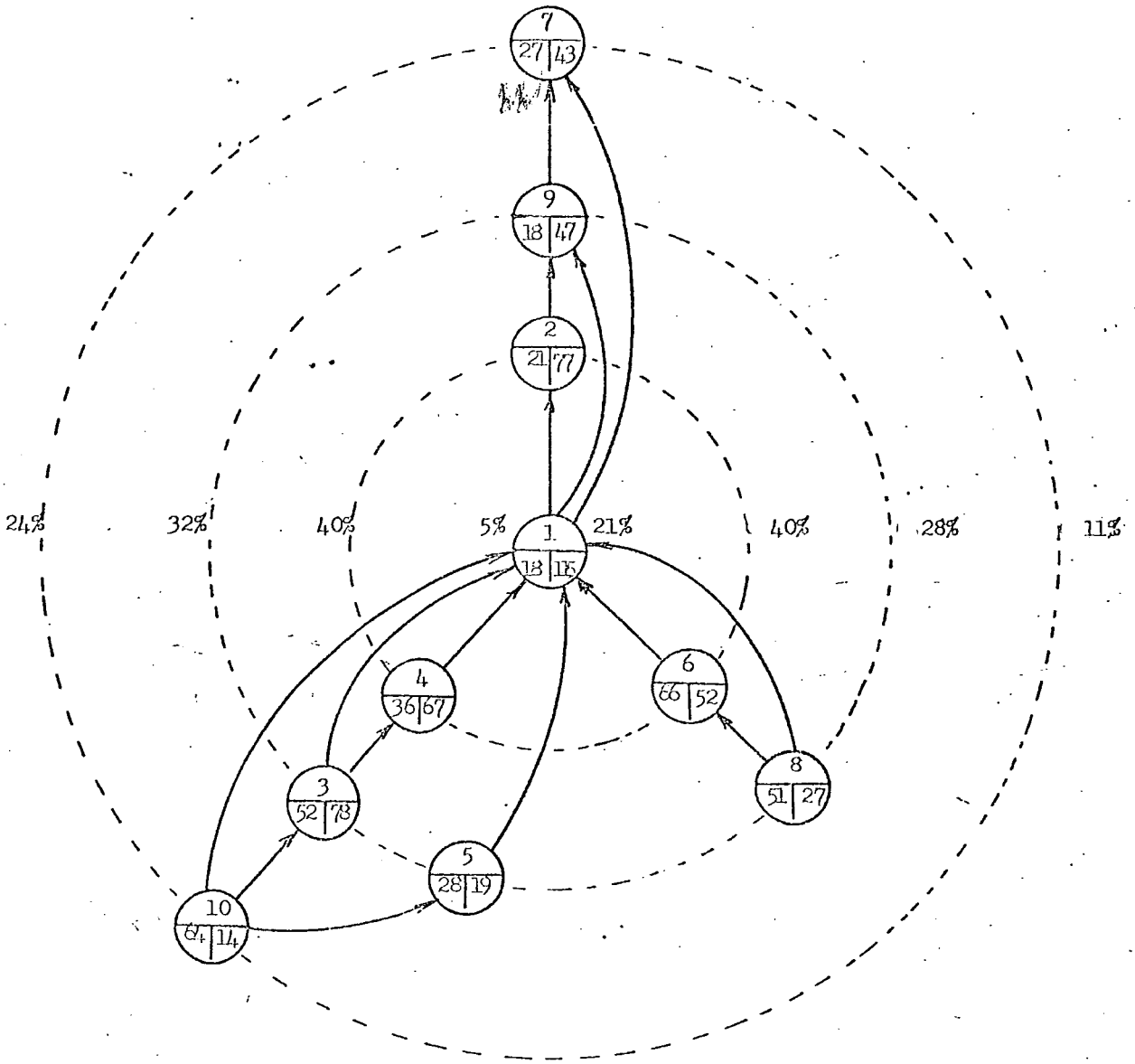


Figure 10.37: Common heuristic with data on low and high experiences superimposed

1. The products of success
2. The predeterminants of success

The table of Figure 10.38 presents consolidated data on low and high incidences with respect to the two types of variables listed above plus success in job which is treated as a class on its own. Statistical treatment of this data produces a X^2 value which is significant at less than 0.001.

Type of variable	Low incidences	High incidences
Outcomes of success in job	66	167
Success in job	18	115
Predeterminants of success in job	297	257

Figure 10.38: Association of the occurrence of high and low incidences with outcomes of success, predeterminants of success and success itself

Reorganisation of the data of Figure 10.38, through combining the first two classes, i.e. combining success in job with outcomes of success in job, is presented in Figure 10.39.

Type of variable	Low incidences	High incidences
Success in job and outcomes of success in job	84	282
Predeterminants of success in job	297	257

Figure 10.39: Association of the occurrence of high and low incidences with success and outcomes of success in job and predeterminants of success in job

The data in the tables of Figures 10.38 and 10.39 clearly indicates that:

1. The low incidences are very strongly associated with predeterminants of success rather than outcomes of success in job.
2. For high incidences the association with either outcomes or predeterminants of success although statistically not significant, manifests a slight bias in favour of success in job and its outcomes.

Analysis 2: Conceptual distances of constructs

In presenting the diagram of Figure 10.37 the positioning of the constructs at different levels was explained. The concentric circles centred on the node denoting 'success in job' determine the levels for positioning the other nodes. For references to the levels the following notation (see Figure 10.37) is adapted.

Level 1: Construct 1
Level 2: Constructs 2, 4 and 6
Level 3: Constructs 3, 5, 8 and 9
Level 4: Constructs 7 and 10

With reference to the diagram of Figure 10.37 the level of the construct thus denotes its distance from 'success in job'.

The table in Figure 10.40 presents the data on high and low incidences as these associate with the level of the constructs. Note that the values given in this table are those presented earlier in Figure 10.35 and represent the association of the construct as a percentage of the total association (both high and low) reported. For example, the data in the right most column of Figure 10.40 indicates that level 2 constructs associated in either high or low incidences 34.66% cases. Further, from columns 2 and 3, within this 34.66% case assocation with level, 13.36% related to low incidences and 21.30% to high incidences.

Level of construct (Constructs at that level)	Low incidences (%)	High incidences (%)	Total of low and high incidences
1. (No.1)	1.96	12.50	14.46
2. (No.2, No.4, No.6)	13.36	21.30	34.66
3. (No.3, No.5, No.8, No.9)	16.19	18.59	34.78
4. (No.7, No.10)	9.88	6.19	17.07

Figure 10.40: Association of low and high incidences with the level of the construct

The Figure 10.41 is a diagrammatic representation of the data in Figure 10.40. In this, new, diagram the total area represents the totality of high and low incidences. The vertical lines splitting this area divide it into proportions corresponding to incidence reportage (for both low and high) at various levels. Within each level, then, the area is split so that one part

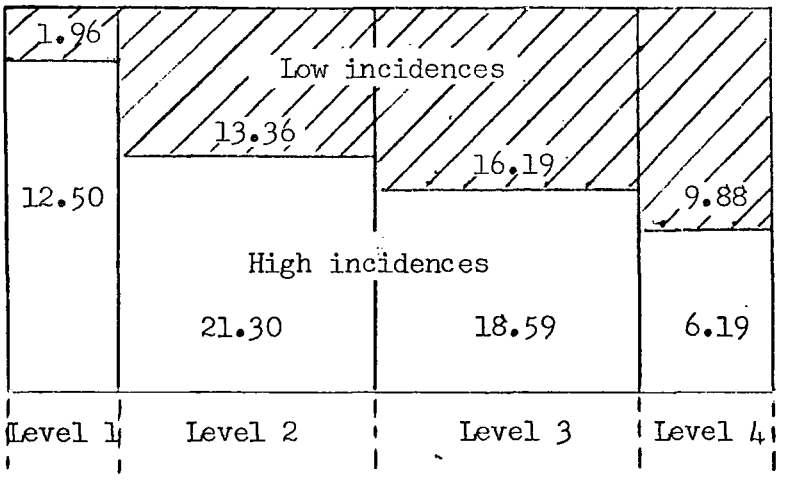


Figure 10.41: Diagrammatic representation of the association between the level of construct and high and low incidences

(the top portion) represents the reportage of low incidences for the level concerned and the other (the bottom portion) represents the reportage of high incidences.

The data of Figure 10.41 clearly indicates that:

1. Going outwards from the central concept (success in job), the proportional reportage of low incidences increases.
2. Going outwards from the central concept (success in job), the proportional reportage of high incidences decreases.

10.6. Saliency of salary and benefits

In this section the saliency of salary and benefits will be evaluated from the evidence, both direct and deduced, of the data collected. Essentially, light can be brought to bear on this construct from two perspectives which will first be listed and then discussed.

1. Pressures - heuristic versus static
2. Connectivity and relativity

1. Pressures - heuristic versus static

Data on static pressures and standardised static pressures has been presented in Figures 10.14 and 10.15 respectively. For the data collected in this study the ranking of the ten constructs, along the computed grades of 'importance placed', places salary and benefits in the 7th position.

Data on average heuristic pressure, presented in Figure 10.16, however, indicates that in the heuristics of individuals - the what leads to what proposition - the highest importance became attached to salary and benefits.

At this point, it is important to recall the concept of product and by-product, discussed earlier. The data on the aggregated heuristic pressures which was the basis of the statement in the foregoing paragraph, does not distinguish between whether individuals attach importance directly to salary and benefits or whether salary and benefits are the by-product of variables attributed the higher importance. This aspect is focused upon in the second perspective, discussed next.

2. Connectivity and relativity

Forty of the study participants, i.e. a third of the total, by assigning the highest grade to salary and benefits regard this construct as a product of their work heuristics. Another 50 of the study participants through assigning lower importance to the salary and benefits construct while, at the same time, attributing higher importance to constructs directly or indirectly predetermining salary and benefits could be regarded to consider salary and benefits as a by-product of their work heuristics. A further 8 of the study participants by placing the same importance on salary and benefits as they did on the, directly

and indirectly, predetermining constructs could be regarded as considering salary and benefits as a concomitant product of their work heuristics.

Thus it could be concluded, from the data evidence given above, that 82% of the sampled population either directly placed high importance on salary and benefits or by placing the higher importance on the predeterminants of this construct indicate the strategic importance of this variable in discussion of the job environment in general, and specifically to the job design paradigm.

From the two perspectives presented above, but referring back to Herzberg's two factor pronouncement, it could be argued that salary and benefits is more likely to be a motivator than a hygiene factor. In further support of the stand being taken, consider the diagram of Figure 10.42, which is based on connectivity data alone, i.e. neither static pressures nor heuristic pressures are being considered.

In Figure 10.42 the node representing construct 7 is placed in the centre of the diagram. The vertical axis passing through node 7 segregates, a la Herzberg, the constructs into motivators and hygiene factors. The horizontal axis passing through node 7 separates the constructs so that those positioned in the lower part represent connectivity <u>into</u> node 7, and those in the uppper portion represent connectivity <u>from</u> node 7. All the nodes are marked with the reference number of the construct they represent. Each construct, save 7, is shown twice in the diagram: once to show the 'to-connectivity' from that construct to construct 7, and the next to show the 'from-connectivity' from construct 7 to that construct. Thus, the connectivity from construct 9 to construct 7 is 45 and the connectivity of construct 7 to construct 9 is 3.

Thus the total connectivity of construct 7 (all the connections of all the other constructs with construct 7) is 197. Of this connectivity total, only around a quarter (27%) is that between the salaries and benefits construct and all the Herzberg-hygiene factors. On the other hand, the connectivity of the salaries and benefits construct with the Herzberg-motivators stands at nearly three-quarters (73%, exactly) of its total connectivity.

Looking at this diagram another way, data suggests that the salary and

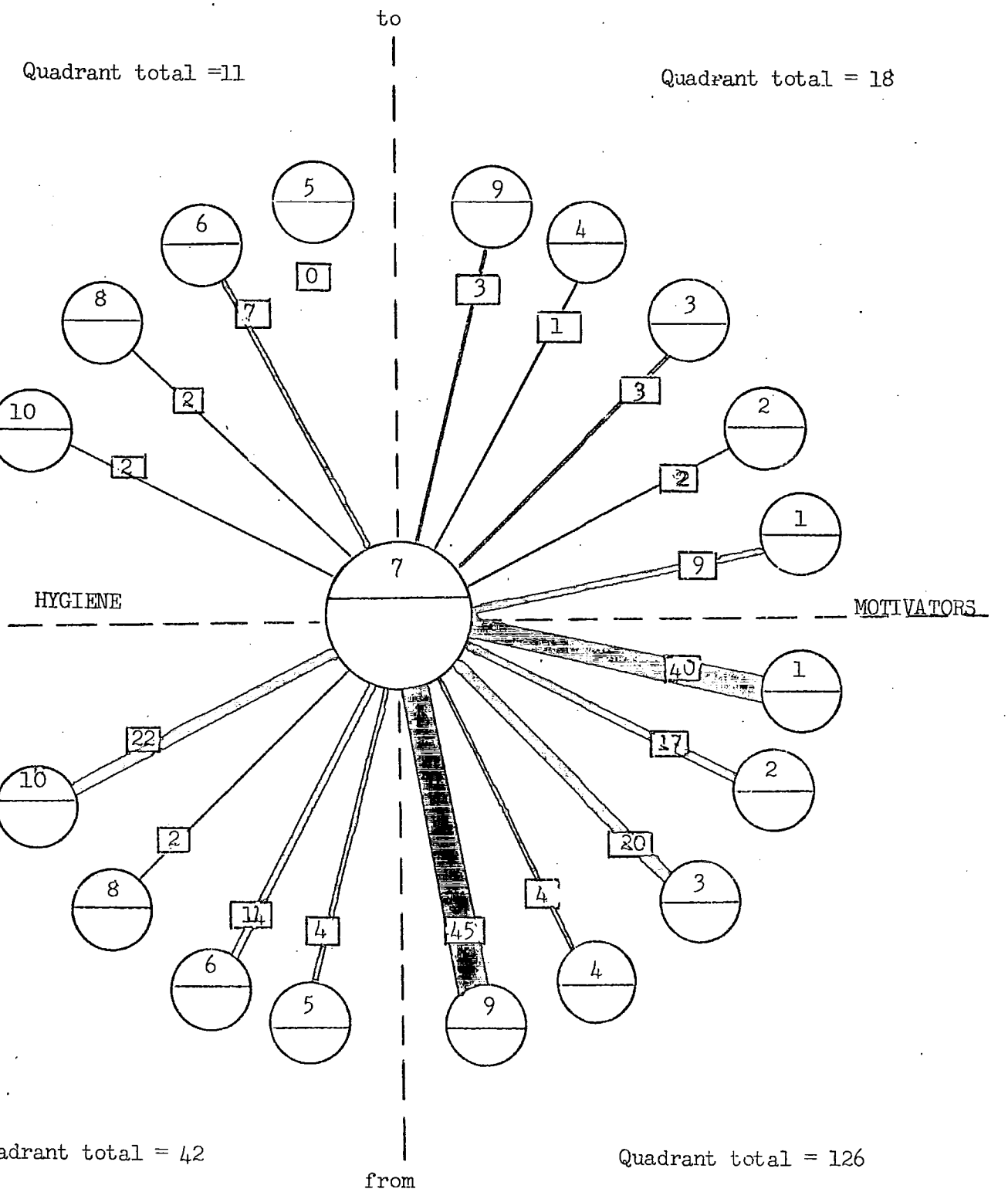


Figure 10.42: Connectivities of the 'salaries and benefits' construct

benefits construct is more often predetermined by the other constructs than it, in turn, predetermines them: of the total of 197 connectivities, 168 into and 29 from construct 7. From this perspective details of the data show that:

1. Of the 168 connectivities <u>into</u> the salary and benefits construct, while 126 (75%) emanate from the Herzberg-motivators, only 42 (25%) emanate from Herzberg-hygiene factors.
2. Of the 29 connectivities <u>from</u> the salaries and benefits construct, while 18 (62%) link with the Herzberg-motivators, 11 (38%) link with Herzberg-hygiene factors.

Thus, overall, the connectivity data of Figure 10.42 provides supportive evidence to categorising salary and benefits as a motivator.

Money is a motivator, but it is a motivator with a difference. In the context of employment, the saliency of money should be recognised in the terms of its association with the other job related variables. The heuristic study data suggests that, at least for some individuals, monetary rewards are determined by the nature of the work performed and this would imply that upgrading the job contents accompanied by simultaneous adjustment of salary is more likely to result in successful job design.

The author wishes to stress the above contention for in some job design undertakings in the past (see Fein (1974)) correspondence between nature of work and salaries has not been maintained - rather money has been regarded as an extrinsic variable and therefore unworthy of manipulation. No wonder Sirota (on the authority of Fein (1974)) has been reduced to strong language:

> "I can't get it through some thick skulls that people may want both - that they would like to finish a day's work and feel that they have accomplished something and still get paid for it".

Thus, it could be concluded that making rewards contingent to performance, and aligning the two should be a job design objective.

10.7. Conclusions

The conclusions to be drawn from the study reported in this chapter fall into the following two groups:

1. Results relevant to job design
2. Evaluation of studies in heuristics and the technique followed

These will be discussed in that order.

10.7.1. Suggestions for job design

A basic premise of the concept of predetermination would be that the fulfilment conditions, or contrivance of situations, denoted by constructs placed higher up in the heuristic map would, at least in part, depend on successful outcomes on constructs placed lower down the chain. So, outcomes on constructs higher up the heuristic map would be enabled through prior success at constructs lower down the heuristic chain.

Given that job design is about enabling the job holder to perform at his peak, then job designers should concern themselves with providing the enabling-force that leads to fulfilment of outcomes desired by these job holders.

As the heuristic force increases going up the heuristic map, the enabling force, for it to serve its purpose, may even have to be the highest in its potency at the lower end of the heuristic map.

This enabling force could be provided by the job designer through ensuring that in the part of the organisation within his ambit:

1. Policies and administrative practices encourage contribution to organisational purpose by providing opportunities for utilisation of skills; encouraging skill acquisition and attempting to eliminate outdated or cumbersome procedures.
2. There is a correspondence between rewards and contribution. Practices which might break this correspondence should be eliminated or curtailed. Attempt should be made to find out the rewards valued by individuals and compensation for contribution arranged in accordance with these.
3. Each individual's work is at his level of ability and each job holder exercises as much control over his work as can, in the context of

technology, be contrived. Here the degree of independence desired by the job holder is the aim.

4. Offers working conditions and facilities which at the least do not hinder performance and at best encourage superior performance.
5. Has managerial position holders who are 'technically' qualified for the positions they hold, or have ready access to specialist technical advice which they should be encouraged to use.
6. Encourage and find methods of improving interpersonal relationships. Once they are at an acceptable level, these should not be allowed to deteriorate.

Success at activities of the above nature, from the evidence gathered in the study reported in this chapter, would, in all likelihood, result in a sense of achievement for the job holders.

Further, and for the following two reasons:

(i) Individuals pursuing careers form their work heuristics specific to their particular environment.

(ii) Design of interlinked jobs would involve contriving balances (over different domains) between them.

A job design policy statement would be most helpful. The policy statement being a constituent part of the aforementioned organisational policies, would have to be devised foremost, for unless the design policies are laid down first, no amount of tinkering with the design manipulable variables would, in all probability, produce lasting design success and the value of such unplanned undertaking to the job holders and the organisation would be ephemeral. In fact activities undertaken un-policied, even along the lines stated above, would ultimately, in all likelihood, induce a negative attitude towards job design attempts in the future.

The conceptual outline of such a job design policy statement, since interpretations of it would be used to contrive relativities and relationships between jobs, as well as regulating relationships between individuals and within groups of individuals, would require statements on the guiding spirit behind this (the job design) activity. Thus to the above series of 6 points,

comprising what is required, is added the following, seventh:

7. The issue of job design policy statement

which would serve to facilitate the accomplishment of the other six.

Note, however, that although the author sees the necessity for item 7 above, the particular concept was not researched either in the study reported in this chapter or in any of the studies reported prior to this. Seeking the necessity of some governing or guiding principle for the job design policy statement, in fact, led to the research reported in the next chapter (Chapter 11).

However, before moving on to the next chapter a brief discussion on the material and method of heuristics is presented. This discussion will, moreover, from another perspective, touch on the dielectic discussion conducted in the next chapter.

10.7.2. An appraisal of the concept of heuristics and the reasons for following the particular technique

It may sound trite, but it is sometimes worthwhile, to state the obvious; especially when the obvious has been derived empirically and existing theory is, (or at least certain strands within the relevant sections are) at odds with what to some may appear obvious.

The data from the study reported in this chapter would support the following three contentions:

1. Preferences are statements of likes and dislikes (what people want and what they would rather avoid).
2. Satisfaction is stated in terms of whether or not, and the degree to which, the subject is successful in getting what he wants and avoiding what he dislikes.
3. Dissatisfaction is more likely to be stated in terms of the causes (situations and reasons) which prevent successful experience of satisfaction.

The first of the above three listed statements is a premise and the other two are conclusions from analysis of the data. Thus job dissatisfaction

remains the opposite of job satisfaction , only the frame of reference in the articulation of these is different: while satisfaction is related directly to the desired product, dissatisfaction is related, within the means and end chain, to the 'causes', as perceived by the narrator.

The primary data of Herzberg et al (1959), of Starcevich (1972) and Locke and Whiting (1974) would support the two conclusions stated above.

The acceptance of the above conclusions also leads to plausible explanations for how certain variables (those with a negative social bias) may be conflated (with those either free of this social stigma or having connotations which are socially fashionable), with certain other narratives of satisfaction and dissatisfaction.

The social norm that people should not overtly express too much interest in the accumulation of material rewards is discussed by Pellegrin and Coates (1956) and Herzberg et al (1959). The latter researchers in fact comment on how the 'unmentionability' of money can be a problem in research. They write:

> "When the person taking a test comes from a group in which it is impolite to value money highly, he would be unlikely to rank wages high even if this were of great importance in determining his morale".

Now consider an individual who believes himself to be underpaid. The heuristics study data indicates the predeterminants of salary and benefits to be advancement and recognition. Conclusions from the heuristics study would suggest that the above mentioned individual would, more likely than not, articulate his dissatisfaction with salary in terms of recognition and advancement. Now, add to it the unmentionability of money syndrome. Taking this into consideration it would be even more likely that the dissatisfaction is articulated in terms of the more socially acceptable predeterminants of salary and benefits.

Now consider another individual, equally motivated by money, but who is satisfied with the level at which he is receiving it. An implication from the heuristic study data would be that, more likely than not, the situation of satisfaction with money will have been reached through first acquiring the requisite levels of recognition and advancement. Thus, satisfaction with money could, with equal facility, be stated in terms of satisfaction with these latter mentioned but predetermining concepts.

The considerations discussed above point to possibilities of how the social undesirability (or desirability) of a construct could conflate its contextual importance with those constructs predetermining it, or even possibly with those constructs that it predetermines.

From the study of heuristics reported in this chapter, a legitimate conclusion would be that such studies appear to offer the potential of furthering research into areas where constructs have social connotations, which would otherwise make them difficult to beresearched.

Can one man motivate another?

Suppose Mr. A has a certain amount of work, of a specific type, which he would like done. Consider the following two ways in which it could be accomplished:

Method 1: Mr. B is offered £10.00 to do it, and he refuses. The offer raised to £20.00 is also refused; but when the offer is further raised to £30.00 it is accepted and the work is done.

Method 2: An electrical machine for doing it is available: pressing the starter button, is all that is required for the work to be finished.

Thus, the work can bedone by either method. However, can it be said of Method 1, that Mr. A motivated Mr. B into doing it? A convincing argument to make this assertion would be difficult, and the acceptance of it would be based more on faith or rely on definitions of terms. The explanation of what transpired between Messrs. A andB in terms of individual heuristics would however be more straightforward.

Interpretations along the heuristics standpoint would suggest that Mr. B must have had the money motive, at either the primary or, more likely,the secondary level. The actions of Mr. A would simply be regarded as 'tapping' Mr. B's heuristics until a point was reached where the money being offered met the motive need (for primary motive) or provided the facilitative power (for secondary motive) acceptable for Mr. B's purposes.

The acceptance of the above interpretation leads to the conclusion that one person cannot 'motivate' another. Through intervention in heuristics,

one man can, however, get another to do something.

Note that the incident narrated at the start of this section was of the 'short-time' type. The interpretations drawn would also thus be applicable over the short-time interchanges. Over longer periods of time, whether motivation can be created is a different proposition, and would not be within the thesis remit (see Chapter 2 for Nature and Nurture argument).

Support for the above contention comes from Morse (1973) who writes:

> "Our research points out that managers in general can have a great deal of influence on the motivation of individuals in the organisation. A manager can truly manage motivation. Analysis of our data suggests that a manager manages motivation by ensuring that individuals perceive that the attainment of personally important and valued rewards is highly probable in the work place".

In other words motivation can neither be created nor enhanced; it can, nevertheless, be managed. The management of motivation, drawing from Morse but getting it in the context of heuristics, would involve recognition and acceptance of the individual's own motives and proposing a strategy acceptable to him whereby he achieves his goals through achieving the organisational goals.

From the foregoing it could therefore be surmised that the study of individual's heuristics may have something substantial to offer.

Some references to the need of studies in heuristics were given in the introduction to this chapter. The unexplored nature of this area and the need for research is also reflected in the following quotation from Hall (1976):

> "Do most managers aspire to the same goals in an organisation, but perceive different pathways to their attainment? or do managers differ regarding the reason they work and then employ practices best suited to attain these different objectives"?

Reported research on motivation has, until now, addressed itself to the second part of the above quoted statement, and specifically to the substantive rather than the process part of it. For what managers do, or for that matter anybody does, to achieve their desired goals is not well reported except in the form of case studies by those taking the anthropological perspective (e.g. Dalton (1959)).

The inadequacy of attitudinal studies for understanding, and thereby affecting, behaviour has been reported by many, e.g. Moore (1954) and Baehr

(1958). Baehr, for example, writes:

> ".... the employee does not generally view his environment in a way in which a questionnaire or survey usually present his views, i.e. as a set of distinct and separate opinions .... the employee is not a hedonistic calculating machine who registers "plus one" for every specific satisfaction that he gains from the work environment and a "minus one" for each dissatisfaction. His views as expressed through a questionnaire are but fragments of broader, more complex patterns of attitudes. It is essential, therefore, that there be a well defined rationale to assist the interpreter in piecing together the different opinions expressed by employees into the complex of attitudes which characterise the way employees feel about the work environment".

It was the author's decision that although the area was totally unexplored, results from within this area could further his job design work that prompted the study of heuristics reported in this chapter.

The decision to explore this uncharted area led to search for data analysis methods that could be exploited. This search and its outcomes will now be briefly presented.

Some of the reported studies on association between variables use correlational analysis. The type of variables under scrutiny in social sciences, nevertheless, do not easily lend themselves to correlational analysis. For example, Argyris (1957) questions correlates of the type where the effect of one is implicit in the other. While deriving a model of analysis he developed for his research in a bank, Argyris writes:

> "(..) question can be raised about the practice whereby researchers correlate employee attitudes to, let us say, production records. According to our model the actual production of the bank is highly influenced by the morale process. The production figures therefore actually contain within them the impact of the morale process; they are partially caused by this process. The validity of the correlation under these conditions is questionable, since the two variable correlates are not discreet".

Pure correlational studies on variables known, on <u>prime facie</u> grounds, to be related could be regarded as methodologically unsound.

The method of hierarchical linkage analysis (see McQuitty (1960)), although based on correlations, offers the possibility of investigating linkages between variables. However, its main use appears to be in the area of typologies.

Recently the use of the bivariate correlation model in social science research has been discarded in favour of process models. This shift in usage,

as well as the inadequacy of static correlations is brought to notice in the comment from Griffins (1977):

> "Psychological and sociological literature is replete with research documenting the bivariate association between an indicator and its "determinants".... However, little effort has been devoted to explicating the causal process leading to psychological success in work organisation. Recognising this organisational researchers have, in recent years, turned to correlational-causal analysis in an attempt to further the understanding of psychological success as a process, that is, as a network of simultaneous causal relationships".

Cross-lag analysis and Path Analysis are two techniques applied in process analysis. However, the limitations of the applicability of these to social data is pointed by Cook and Campbell (1976) and Hilton (1972). Cross-lag technique of analysis is, according to Cook and Campbell, able to answer questions of the type:

"Is A stronger than B than B is than A?"

It is not able to answer the question:

"Does a change in A cause a change in B?"

Thus, although the model of analysis is dynamic, the inference domain is static!

Similar inference could be drawn, regarding the path analysis technique, from the review by Hilton (1972).

A review of the type presented above led the author to devising the method that was used in the study and has been documented in the main body of the chapter. It is based on graph theory, is simple and served the author's research purpose.

In their discussion on methodologies, and specifically the final choice of methodology used, Lawrence and Kotter (1974), with respect to a specific piece of their own research, have the following to say:

> "As a result of our histories and socialisation patterns, we tend to place a higher value on 'usefulness' and 'innovation' of our research and a lower value on its methodological 'cleanness' (how well it follows existing standards), than do many of our academic colleagues. We are quite aware of the consequences of research guided by these values. Such research often obscures the incremental orderly development of knowledge in some areas, and it wastes resources. On the other hand, it also leads to innovation and significant increases in applicable insight".

The forceful articulation in favour of acceptance of innovative methodologies implied in the above quotation the author would have difficulty to improve upon;

so he leaves the matter here.

It has earlier been suggested that the area covered under the heuristics title is new; the diagram of Figure 10.43 places this new area in the context of other theories relevant to job design. Thus, it is the author's belief that studies in heuristics could be regarded as the 'missing link' for job design theories.

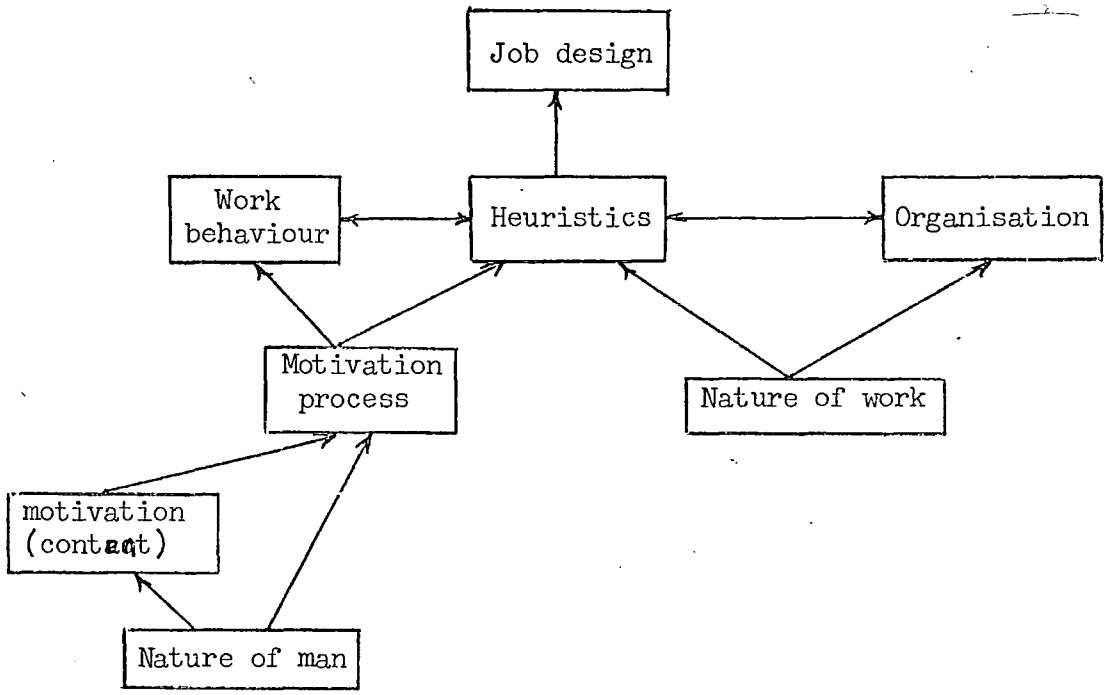


Figure 10.43: Study of Heuristics: The missing link

Chapter 11

CHAPTER 11

JOB BALANCES: JOB DESIGN AS AN ARBITRAGE PROCESS

Introduction

In this chapter the author presents the theory of job design built by him during the course of his research. It is a contingent theory.

The literature which helped evolve the author's conclusions which culminated in the theory makes fascinating reading. However, the material presented herein owes nought to catching and gripping the author's attention but to the fact that it is directly relevant to showing the logical build up of the arguments - the reasoning - which led to the suggestions resulting from this evidence. Thus for the purpose of showing evaluation, original or source material going back some half a century is included in the discussion.

The way the design of a job is manipulated depends on the purpose of manipulation; these two aspects, the way and the purpose, together determine the nature of job design. By focussing on the rationale of job design, this chapter does deal with the nature of job design.

Conceptually the chapter has a trichotomous structure, with the following components:

1. Important concepts that have been seeded in the foregoing chapters but which for the purpose of theory exposition are pulled together, along with some new evidence, from literature, bearing on the perspective.
2. The theory developed by the author and the facilitative requirements for application of theory within organisational setting. This theory will be referred to as the theory of job balances.
3. A contrast in the rationales between, on one side, the job balances theory, and on the other side as deductively arrived by the author from the other theories of job design which were themselves presented in Chapter 5.

The eight sections within this chapter are:

11.1 The necessity for balancing the job
11.2 Satisfaction emerging from the performance-reward equilibrium
11.3 The concept of rewards
11.4 Equity as a basis for performance-reward equilibrium
11.5 The wholistic theory rationale for job design: equity, effectiveness and efficiency
11.6 The concept of resources
11.7 Facilitative requirements of the job balances theory
11.8 The new rationale contrasted with rationale reported in literature and evidenced in data from studies reported in Chapters 6, 7 and 9

These eight sections fit into the trichotomous structure as follows:

1. Sections 1, 2, 3 and 4
2. Sections 5, 6 and 7
3. Section 8

11.1. The necessity for balancing the job

Greene (1973) reporting his investigation on the "causal connections among managers' merit pay, job satisfaction and performance" started the article with the following text:

> "The relationship between job satisfaction and performance contributes perhaps the most provocative area of study concerning behaviour in industrial organisation. Four decades have elapsed since the initial investigation by Kornhauser and Sharp (1932), yet interest in this subject by both practitioners and researchers has grown. This growing interest has occurred in spite of Brayfield and Crocket's (1955) conclusion that, 'there is little evidence in the available literature that employee attitudes .... bear any simple - or, for that matter, appreciable - relationship to performance on the job'".

Brayfield and Crocket (1955), reference to whose work is made in the above quotation, themselves draw on the work of Kornhauser and Sharp and, as a matter of fact, refer to these earlier researchers work as having, "initiated research in this area of industrial psychology".

Kornhauser and Sharp's (1922) overall, and oft quoted, conclusions were:

> ".... efficiency ratings of employees showed no relationship to their attitudes".

The formulation of the above statement in terms currently in use, and as evidenced from the Greene quotation given above, would be:

'Production and satisfaction are unrelated'.

However, the substantive argument of this section is based upon the passage, in the Kornhauser and Sharp report, which starts at the very next sentence following the above quotation therefrom. The import of this passage lies in that it not only depicts the situation extant, which partly led to the above conclusion, but also shows the probable causes which created, in the first instance, the situation observed. Here, then, is that passage, split into two to facilitate discussion.

1. "However, in one group of 20 girls for whom we had comparable output records, three of the four with most unfavourable attitudes were first, second and fourth in production and the most favourable were near the bottom in production".

2. "The dissatisfaction on the part of some of the best workers probably reflects their feeling that they were not properly rewarded relative to

poorer workers. All were paid a flat hourly rate. The same explanation accounts for the results in the entire mill, in answer to the question: 'Should some girls be paid more than others on the basis of good work and good records?' Of those with high efficiency rating 64 per cent said, "Yes,"while only 25 per cent of those with low rating answered "Yes".

Figure 11.1 is a tabular representation of the data describing the situation in the first part of the quoted passage. Cell values indicate frequencies of occurrence.

Row totals	Organisational satisfaction		
	High	Low	
2	-	2	High
14	?	?	? Individual
4	3	1	Low satisfaction
20	3+?	3+?	Column totals

Figure 11.1: Occurrence of organisational and individual satisfaction from Kornhauser and Sharp data

Data of Figure 11.1 shows 10% cases to have 'low production and high satisfaction' and 15% to have 'high production and low satisfaction'.

In the second part of the passage, the cause of dissatisfaction is alluded to be the lack of relationship between performance and reward. On a majority consensus the suggestion for the creation of an equilibrium between performance and reward received acceptance (nearly 2/3 for and 1/3 against). Therefore, it could be said that dissatisfaction could have been reduced were steps taken to contrive this performance-rewards balance.

Emphasis have been added to the word 'reduced' in the above text for two reasons, the first of which has to do with the fact that 1/3 of the polled population did vote against the creation of this performance-reward balance and, secondly, because a latter researcher, Greenberg (1977), from his data on performance-reward balances was led to conclude that certain types of people:

"... welcomed the unearned rewards".

Greenberg's conclusions would suggest that in situations of the type described by Kornhauser and Sharp, where the assurance of satisfaction and

dissatisfaction are relateable to rewards, the contrivance of the balance between performance and reward, by adversely affecting those who were previously receiving rewards above the level justified by their performance, would be capable of creating dissatisfaction.

The zero sum game - but not an efficient way of operating.

The considerations of the foregoing paragraph lead to consideration of the possible effects of creating a performance-reward contingency.

For the organisation the law of averages comes into effect: the organisation pays above the deserved amount in some instances, and pays less than the deserved amount in some other instances. An alternative formulation of the above would be that the organisation gains something on some, and loses something on certain other individual/organisation interfaces. The sum of the gain and loss, of course, goes into the unit product cost and thereby for the organisation the loss and gain tend to balance out. Similarly, the averaging of the measures on the satisfaction-dissatisfaction investigations would also produce a zero sum.

However and not withstanding the zero sum effects for the organisation, for individuals, i.e. specific persons, the law of averages is meaningless where the performance-reward equilibrium does not hold; those applying themselves to render superior performance are rewarded below what they deserve and those producing low, get above what they deserve.

In Chapter 4 research results indicating that dissatisfied people, outside circumstances permitting, would likely leave, were presented. Satisfied workers, on the other hand, tend to stay on; and this whether or not the organisation is satisfied with their performance. For example, Grew (1964) writes:

> "... many satisfied workers are to be found in the employment of only partially satisfied employers".

So, what may appear to be 'zero sum' effect for the organisation may eventually lead to a situation where the good performers leave but the under performers stay on. Under performers having satisfaction would be likely to

stay on because, according to Mobly (1977) outside they would be worse off. Thus, in organisations which do not attempt to create a balance between performance and rewards, eventually under-performance is likely to become a norm.

11.2. Satisfaction emerging from the performance-rewards equilibrium: evidence and implications

Campbell et al (1970) discussing the absence of relationship between satisfaction and performance wrote:

> "Job satisfaction need have no direct link with effort or performance. Job satisfaction reflects feelings about first level outcomes, or rewards, but rewards need not be contingent on behaviour, at least performance-related behaviour. Thus if rewards are not related to performance, job satisfaction will not be related to performance. We think this is reason enough for the preponderance of few relationships that have been found in most studies that have attempted to correlate job satisfaction and productivity. .... we should add, however, that previous research on this relationship has dealt with non-managerial subjects. If rewards are more contingent on performance for managerial jobs, we might expect significant correlations".

There are two hypotheses in the above quoted text. The second of these - the one related specifically to managerial position - is not supported by evidence from Lawler (1966), who on the basis of a study specifically directed at the topic found managerial performance not to be linked to job remuneration either.

Support for the first hypothesis comes from Cherrington, Reitz and Scott (1971), who in an experimental situation rewarded subjects either randomly, appropriately or inappropriately. The relationships for performance-satisfaction were:

(i) appropriate reward: positive satisfaction correlation
(ii) inappropriate reward: negative satisfaction correlation
(iii) random reward: zero correlation

Ergo, no causal inference; by manipulating the performance and reward contingencies any correlational correspondence can be induced for the data as a whole; but when viewed with appropriate and inappropriate reinforcements the results speak for themselves.

Kesselman, Wood and Hagen (1974) following a somewhat different methodology could not arrive at results supportive of Cherrington et al. The results of Kesselman et al are, however, inconclusive due to confounding of two distinct reward systems that were in use during the course of their study. It should be pointed out that while the Cherrington et al study was a laboratory set-up, the Kesselman et al study was an attempt at field replication. Control over overlapping reward systems proved unsurmountable for Kesselman et al.

Jacob and Solmon (1977) took up the challenge to test whether Cherrington et al results could be replicated in a better controlled field study than was possible in the Kesselman study. Their findings give non-equivocal support to the Cherrington proposition. Jacob and Solmon write:

> "The moderating effect of performance to rewards contingency as advanced by Cherrington et al (1971) was shown to significantly increase the observed covariance of satisfaction and performance".

The egg or the chicken

Wanous (1974A) reports intrinsic satisfaction to be the resultant of performance, and extrinsic satisfaction to be the predeterminant of performance. The standpoint is illustrated in the diagram of Figure 11.2. Organ (1977) attempts an explanation of how satisfaction may lead to improved performance.

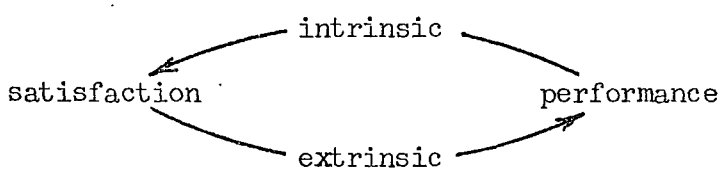


Figure 11.2: Relationship between performance and satisfaction

The proposition of Organ could be put as follows: the receiver (of rewards) seeks to reciprocate and the mode adopted leads to increments in performance. However true the proposition in specific cases might be, the argument for its total acceptance would be repudiated by the data presented in the foregoing subsection which showed people who were satisfied not to have reciprocated by rendering acceptable performance. Further, also mentioned in the last section, the standpoint of Greenberg (1977) suggests that certain people gleefully take unearned rewards and these might not reciprocate.

Deductively, from the results of Wanous's report, it could be hypothesised that for jobs which are high on intrinsic properties, satisfaction and performance would be that much higher than for jobs low on intrinsic properties. Such a hypothesis was tested by Baird (1976) but data did not support the predicted directionality. Rather jobs low on intrinsic properties generated positive correlations.

Green (1973) from his field study, in which manipulation of variables was

involved, came to the conclusion that satisfaction was an effect and not a cause of performance, and further that merit pay not only caused satisfaction but that it increased the performance and rewards correlation. Greene's results, based on the manipulation of the rewards variable, are convincing.

From the foregoing, the conclusion would be that the controversy as to whether performance begets satisfaction, or whether the relationship is the other way round, is by no means over - the research results are equivocal.

From the job design theoretical standpoint, the nature of the above discussed underlying relationships are not of import; their importance lies in application considerations, which will be discussed shortly. For the moment, from the theoretical standpoint only the existence of the balance is necessary. The necessity of this balance is articulated very strongly in the plea by Porter and Lawler (1968A):

> "The first step in understanding this subject is to stop putting the satisfaction cart before the performance horse, so to speak. It appears wiser to think of job satisfaction as something that is likely to result from performance behaviour rather than as a cause of good or bad performance".

The knowledge of the directionality of the relationship between performance and satisfaction would be of value in the situation to be discussed now.

In the preceding section (11.1) was presented field study data which showed frequency cross tabulations of satisfaction (low and high) against performance (low and high), in the absence of performance-rewards balance. Figure 11.3 is an outline representation of the data then discussed; the small letters, p, q, r and s, enclosed in circles, represent the frequency of the occurrence of the incidences depicted; the cells containing these frequencies will be referenced by capital letters P, Q, R and S respectively.

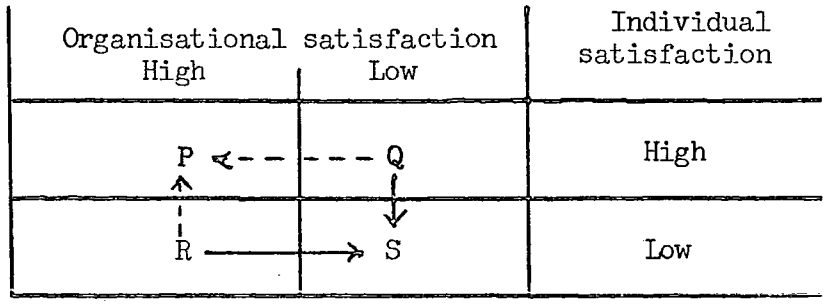


Figure 11.3: Analytic framework for satisfaction (organisation and individual) in the absence of performance-reward balance

The subject under discussion is the probable movement of frequency counts between the cells P, Q, R and S, following the contrivance of a performance-rewards balance.

From the results of the correlational studies, reported earlier in this subsection, it can be predicted that the frequencies in cells R and Q will diminish with cases formerly therein moving towards the line joining P and S, i.e. going into cells P and S.

From the theoretical standpoint of balance at the individual/organisation interface, the movement whether into P or into S is undifferentiated, i.e. it matters nought whether a particular case moves into cell P or into S.

However, from a practical viewpoint, higher incidences in S following adoption of performance-reward balance could be looked upon as a negative side-effect. With regard to this possible side-effect, drawing from the research of Hegarty and Sims (1978), it could be suggested that, at least for some cases, this would be a transient phase: these individuals would build alternative heuristics to get what they want. The alternative heuristics could also depend upon the possibilities available within the effort-performance balance (Section 11.5). And herein lies the importance of the inner balances.

11.3. The Concept of rewards

Job design determines both the kinds of rewards available and what the individual must do to obtain the rewards (Buchanan (1979)). However, in the discussion so far rewards have been left undifferentiated. Under this heading is a brief discussion on how different rewards could be incorporated into organisational policy on job design.

Porter and Lawler (1968) wrote that, the influencing power of the rewards depends upon:

> ".... the value the receiver places on it. In effect, rewards that the company considers highly positive inducement may not be so regarded by many of the persons receiving them. Yet how many times do companies check this out".

Thus, to help the individual to build a personally satisfactory and successful set of heuristics organisational recognition of individual preferences in rewards is necessary. Thierry (1978) has defined an operational way in which each individual can, within limits on the total compensation, choose from a 'manner' of rewards which individuals themselves have earlier defined. Thierry opines:

> "I think it is quite possible to let every individual determine what proportion of his income he or she would like to receive in sheer cash. The rest could be paid in terms of other benefits such as improved pension, earlier retirement, longer holidays, or more insurance, according to personal needs and individual factors, such as age and the effect on personal tax. In this way, an employee would get the benefits he personally prefers and, equally important, would avoid getting what he does not want".

That such a complex looking scheme is manageable, albeit through computerisation, is evident from that fact that some organisations have already adopted it.

In areas where rewards are interlinked, as in the case of recognition leading to promotion leading to higher pay, it may be necessary to apply some standardised procedures for choosing candidates. Read the case presented in Chapter 4, where promotional policies in two departments were at variance. Knowledge of the criteria used for awarding such rewards could help competing candidates to come to terms with the decisions made; moreover, the development of the criteria through group participation could lead to their greater acceptance than otherwise, i.e. imposed criteria.

11.4. Equity as a basis of performance-rewards equilibrium

The suggestion that job design should attempt to contrive a performance-rewards equilibrium requires some elaboration on what could be involved in any attempt to do so. Of help here is the standpoint of equity. The dictionary definition (Oxford (1960)) of equity is:

> "fairness; resource to principles of justice to correct or supplement law co-existing with and superseding common and statute law".

Thus, application of equity involves a comparison, which could be of the following types:

(i) what is - what should be

(ii) what happened - given a situation

From the concept of equity Festinger (1957) developed the theory of social comparison, which is often regarded as a theory of motivation (see Campbell et al (1970)). Jacques (1961) notion of 'equitable pay' and Cameron's (1976) concept of 'felt fair pay' both derivable from Festinger's theory, have aroused a fair bit of interest in recent years.

However, the concept of equity was used much earlier by Fayol (1915/1977), as a basis for one of his principles of management.

The modern formulation of equity, especially with reference to remuneration (see Adams (1963) and Pritchard et al (1972)) is based on the following three comparisons:

1. Individual's own yardsticks for evaluating the worth of his own contribution. Here the comparison is in terms of what he thinks the organisation gains from his work, and in terms of how well he thinks the others might handle the job currently performed by him.
2. What the individual thinks others within the organisation producing similar outputs receive for their contribution.
3. Rewards given by other organisations for essentially the same work.

Money is often a concommitant of such factors as status, responsibility, success, independence or security (Handy (1976)), but while these latter factors may not be directly measurable, money is. On account of measurability

of money, and therefore possibilities of direct comparison which leads to determination of relativities, Spillane (1973) writes:

> "Salary may be a stronger motivating force than had generally been acknowledged in recent writings".

The fact that the notion of equitable rewards is based on a comparison while lending it intrinsic merit could also cause any award making scheme difficult to run. The difficulty, in the words of Locke (1976), would arise because:

> ".... the concept of equity is so loose that it allows for enormous variations in individual interpretation, for example, in the nature of reference groups used for comparison, in particular aspects of equity to be considered, etc. Thus it is very easy for an individual to switch his standard of equity in such a way as to always give himself the highest possible level of 'equitable' payment. It is especially easy to justify 'overpayment' by finding some other person or group who is equally highly paid and who is comparable in some ways to oneself".

Locke's analysis suggests that for successful functioning of an equity based award scheme, prior agreements on acceptable comparisons may be necessary. Thus, for devising the scheme as well as running it, the participation and consent of those governed by it may be necessary.

11.5. Job balances rationale for job design: equity, effectiveness, efficiency and sufficiency

In Chapter 1 a job is defined as an individual/organisation interface contrived to beget gains for the two parties.

Building on Chapter 2, the process of designing jobs should consider a job held by an individual, at any time, as a point in a career; implication thereof would be recognition of part learning and the need to prepare for future assignments.

Building on Chapter 4, the process of job design should give cognisance to both the immediate needs of the organisation as well as its future expected needs.

In Chapter 6 were presented the three measures on the quality of the design of the job. For situations presented during the discussion in this section, where it is necessary to know wholistic theory perspective on whether the situation depicts a deficiency in design, these measures act as references. Reiterating the concept of the quality of the design of the job, a job would be considered deficient in design if:

1. The contribution to organisational purpose - is low (the organisational view).
2. Job satisfaction derived by position incumbent - is low (the job holder view).
3. Utilisation of individual potential - does not meet individual or organisational wishes.

Building on Chapter 3, the analysis of a job from the input/output perspective would indicate the qualitative and quantitative effort required by the job holder to be an important consideration in any job.

In Chapter 8 it has been stated that dissatisfaction arises when an individual's (or the organisation's) expectations are violated.

From Chapter 10, reporting the study on heuristics, deductively, it could be posited that individuals (and organisations) build heuristics for arriving

at the outcomes desired by them, in the light of the job contract explicitly stated as well as the norms of the milieu (both within and outwith the organisation).

In Chapter 5 was presented the author's conceptualisation, derived from system theory, of a job.

To build up the wholistic theory rationale for job design, a start will be made from the diagrammatic representation of 'the job', earlier given in Figure 5.1, which is redrawn as Figure 11.4.

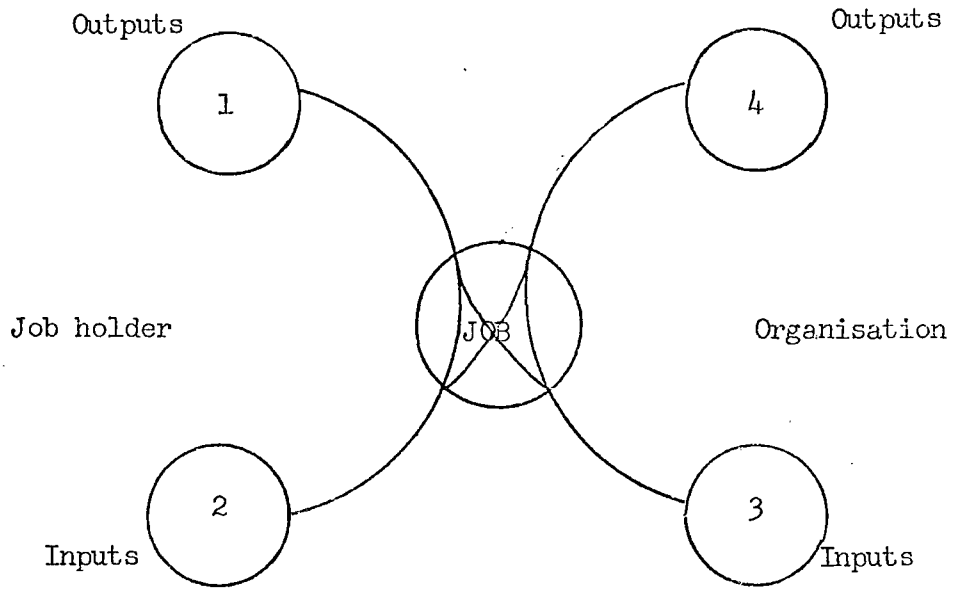


Figure 11.4: Conceptualisation of 'job' for the derived rationale for job design

The job holder outputs (marked 1 in the Figure 11.4) are of the following class/type:

(i)(a) Salary and its concommitant (e.g. position in hierarchy, recognition,)etc.

(b) Benefits, e.g. holidays, status, insurances, concessionary purchases, pensions, car, etc.

(c) Prospects for the future, e.g. skills enhanced through experience; reputation gained in profession, tenure.

The job holder's inputs (marked 2 in Figure 11.4) are the composite of what he brings to the job. These are of the type:

(i) skills, 'know-how' (valued by the individual)

(ii) values and ethics

(iii) time and consent

(iv) personal constraints

(v) aspirations

The organisational inputs (marked 3 in Figure 11.4) are of the type:

(i) rewards given in recognition of contribution, both those given on immediate regular basis (e.g. salary, holidays) and those of the accruing type (e.g. pensions).

(ii) work (roles/duties/tasks; problems) etc.

(iii) authority

(iv) resources for task accomplishment

The organisational outputs (marked 4 in Figure 11.4) are essentially of the 'value added' type, i.e. the organisational inputs to the job are converted by the job holder into 'products'. In specific cases theform of these products differ. For example, for a sales manager, the product could be the sales orders received; for the marketing manager the product would be support for the sales department; for the production manager the product would be the item(s) for the manufacturer or assembly of which he is responsible; for the public relations officer, the product would be the goodwill created or successful effort at preventing the public esteem from slipping; for a planning or schedulin officer, the product would be the plans, or schedules prepared by him. Thus, more often than not, the product of the managerial job may not be directly saleable to the public, but adds value to organisational effort. Organisational outputs from the managerial job, then, are of the type:

2.(a) Value added to organisational purpose or resources.

(b) The learning and skills imparted to co-workers.

(c) Prospect of continued service and utilisation of abilities enhanced through experience.

The rest of sub-section presents even balances which the author suggests as important in the design of a job.

<u>The purpose of job design</u>

The purpose of job design will now be discussed in terms of the relationships which it is necessary to create in the process of designing.

1. Equity. The process of job design should be initiated in order to create a balance between the outputs enjoyed by the two parties. With reference to Figure 11.4 attempts should be directed to create a balance (equity based) between items marked 1 and 4.

2. Effectiveness. In Chapter 4 (Section 13) effectiveness has been defined as having to do with the degree to which the desired goals are met.

   2(i). Individual effectiveness would be, thus, a function of the degree to which the outputs received by the individual (marked 1 in Figure 11.4) met his expectations. A purpose of job design would, therefore, be to attempt to create a balance between what the job holder expects and what he would equitably receive.

   2(ii). Organisational effectiveness would, similarly, be the degree to which the outputs received by the organisation meet the organisation expectations. A purpose of job design would therefore be an attempt to create a balance between what the organisation expects and what it could equitably receive.

The above stated purposes, based on the creation of the performance-rewards equilibrium, although necessary, would of, and in themselves, not be sufficient. For, as pointed out by Hackman (1978), if the job is below-ability and undemanding, then the employee may even feel a sense of organisational control - the rewards are there but only if the employee behaves in close accord with explicit organisational specifications. The job situation in Hackman's words would be:

> ".... the employee is faced with contingencies that specify 'the harder I work, the more negative I feel about myself and what I'm doing, the more likely I am to get tired and headachy on the job, and the more likely I am to get praise from my superior and significant financial bonuses'".

So, further necessary conditions and operational goals for job design, based on adjustment of inputs, i.e. the effort-performance equilibrium, are:

3. Individual effeciency The work allocated (the problemsto be solved or roles/duties/tasks assigned) to the job holder should absorb as much of the job holder's valued resources as to optimise his outputs (see

individual effectiveness above). In terms of Figure 11.4 the relationship under discussion is based on items 1 and 2.

4. Resource sufficiency. Given the roles/duties/tasks assigned to the job holder and given his level of abilities and 'know-how', the organisational resources made available for task performance should be adjusted to facilitate the desired level of task performance.

5. Organisational efficiency. The total sum of the organisational resources (those for reimbursing the job holder plus those consumed in the course of duties) should be such as to optimise the contribution to organisational purpose.

Jobs designed in accordance with the above considerations would, in most circumstances, be high on acceptability, as measured by the quality of the design of the job parameters. However, the following consideration, which relates the individual psychologically to the organisation, would also have to obtain:

6. Personal integration. To make the individual feel part of the organisation, the fellowship of other workers should be conducive to his sense of wellbeing. The work assigned to the individual should not involve him in undertakings that violate his values and ethics. The integrity of the individual as a person should be recognised and effort made towards honouring and accepting the individual's wishes.

7. Organisational integration. As jobs exist in the context of other jobs, the effort to create the above balances should incorporate the concept of balance between jobs. Note that the suggestion is being made that a single job is unlikely to have a stable balance in the absence of balances in the other, co-existing and related, jobs. Thus organisational procedures and systems would, of necessity, have to be checked for their utility and efficiency for the person who, or department which, initiated them but also for their effect on other individuals and units involved in the process and procedures.

In the above discussion the seven balances suggested could be regarded

as contingent parameters; to create the requisite balances, jobs would require loading/unloading of the type of characteristics discussed in Chapters 6, 7, 9 and 10.

11.6. The concept of resources

The effort required for a given level of managerial performance depends not only on the level of abilities (skills, labour, care and sensitivity) the individual possesses and is willing to put into the job but also on the level of organisational resources made available for task performance, to the job holder. For managerial position holders, resources are of the following types:

1. Information - required by the job holder for the proper execution of tasks. This information should meet the criteria of accuracy, relevance, sufficiency and timing. These criteria would have to be defined co-operatively.
2. Materials - for performance of tasks and discharge of duties would include, as appropriate, equipment, plant, machinery, office space, vehicles, etc. Criteria of quality, quantity and timing would have to be defined co-operatively.
3. Money - for the purchase of services. The criteria of quality, quantity and time would, once again, have to be determined co-operatively.
4. Manpower - for the discharge of duties within the job holder's province. Some of the relevant criteria on manpower would be the skills possessed by subordinates, the total number of subordinates, the commitment of the subordinates to the organisation.
5. Authority - to enter into agreements with subordinates, units and groups within the organisation and agencies outwith the organisation. Authority would involve power to transact the resources mentioned in 1-4 above.

Only five types of resources are listed above. In fact, all items that an individual can legitimately claim to be of assistance to him in the discharge of duties assigned to him could be classified as resources. It should be recognised that part of the managerial remit may well be the conservation and/or the building up of the organisational resource base. For example, for an executive working in public relations, the work involves building up the organisation's reputation and certainly preventing it from slipping. For

public relations work internal information would be a required necessity, and to have access to this information the co-operation the manager receives from other employees, especially heads of departments, could well be his chief resource.

Similarly, for the manager engaged in raising finance to meet the organisational development plans, the main resources could be the reputation of the company itself.

Thus, in any effort at synthesis of the managerial job, the resources required and how these requirements could be operationally met, would have to be contingently and co-operatively decided.

Ability to exert effort: an elaboration on the concept

The word 'ability' in common usage can cover the following types of concepts:

1. Knowledge, experience, learning, etc.
2. The psychological constructs, e.g. tolerance of stress, uncertainty, unpleasant working hours, etc.
3. The physical constraints, e.g. use of wheelchairs etc.
4. Personal circumstances: the condition of job holder's own health and that of the members of his family; i.e. the life related circumstances, of the job holder, both transient and those longer lasting, etc.

In the contrivance of the effort-performance equilibrium, the above more general concept of individual ability would have to be borne in mind.

11.7. Facilitative requirements of the job balances rationale

The wholistic theory of job design based on the concept of equilibrium receives its underpinning from the concept of equity. In the context of job design, the individual articulates his own feelings on the fairness of the performance-rewards and effort-performances equilibrium. In the studies reported in Chapters 6 and 7 the evidence from the data indicates that the boss acts as the arbitrator on the performance and also determines the rewards. It was then, in Chapter 8, suggested that the involvement of the job holder's role-set in the determination of performance effectiveness would, in all likelihood, lead to a fairer assessment. In the allocation of tasks/duties, as evidenced from the data reported in Chapters 6 and 7, the influence of the boss, in a majority of cases, predominates and this even when individuals other than the immediate boss participate in the determination of the job holder's work.

The boss, as an individual, has his own personal goals, his own (idiosyncratic) views of reality, his own managerial style, as well as relationships (based on the foregoing) not only with the job holder but other subordinates.

The acceptance of the suggestion that job be regarded, and analysed for purposes of synthesis, as a contract implies that both sides (the individual and the organisation) have rights. Nominally, and as indicated by the aforementioned data, the boss protects the rights of the organisation, and where necessary could call upon superior hierarchical authority to lend support.

Tender are the individual's rights! That disasters can ensue from lack of protection for the individual is illustrated in the study by Ewing (1977) where he reports a director level person to have said:

> "I see no way to .... prevent the man's firing if that is what the boss wants. If one charge is not .... grounds for termination, another will be concocted".

That lack of protection is likely to result in self-protective behaviour by members of the work force was discussed in Chapter 4.

The concept of fairness requires that some machinery be set up within the

organisation to deal with cases giving rise to contention. In Chapter 3 was discussed the concept of job evaluation, the purpose of which is salary determination, i.e. performance-reward equilibrium. The author sees a necessity for a similar system for effort-performance equilibrium determination, for once the output equilibrium has been established the only way to increase the outputs would be through the adjustment of inputs. If the individual or the organisation wants greater rewards th n inputs must be increased and any impediments preventing the job holder from contributing, at the level comensurate with the higher wished for outcomes, would require removal. In Chapter 2, case analysis was presented which indicated that enhancement of skills could be required where the current, equitable, rewards are held to be insufficient by the job holder.

In organisations, especially large ones already involved in job evaluation, the creation of job design evaluation could be recommended. For organisations not yet undertaking job evaluation (see Chapter 6 for incidence of job evaluation), undertaking of complete design evaluation (both performance-rewards equilibrium as well as effort-performance equilibrium) would be recommended.

To summarise the discussion thus far, taking the job as an individual/organisation interface, the acceptance of the above suggestions would vest the interests of the organisation more deeply in the organisation rather than leaving them as exclusively and totally negotiated by one man with another (i.e. the boss and the individual, where the boss has the upper hand).

Thus, for job design to take place, 'democratic' institutionalisation of the organisation would be a facilitative requirement. Note that whereas the institution of democracy within the organisation of its own may, or may not, improve the design of specific jobs, the process of creating balanced jobs would be advanced through a democratised work place. The concept of democracy is being used by the author with a very narrow meaning: access to rectification in the face of biased action or lack of action on the part of the superordinate or whosoever is immediately responsible for the design of the incumbent's job.

With the narrow meaning assigned to the term 'democracy', organisations could facilitate high standards in the design of jobs by assigning this responsibility to a single individual or a group of individuals. This person or body could arbitrate in those cases where the job holder and the person directly responsible for the design of his job did not meet each other's expectations.

In the following section, the difference between the author's use of the term democracy and the broader one found in job design literature will be presented.

11.8. The new rationale contrasted with literature reported rationales

This section is conceptually splittable in two parts: in the first part are presented the dominant themes from job design literature; in the second part the author contrasts these with the job balances rationale for job design.

In the presentation of the first part, analysis is made of what can transpire if the objectives of the purpose were faithfully pursued, but in the absence of any other consideration directly derivable from the rationale. In the discussion evidence is brought from literature. However, and this is important, in deductive considerations the force is contained in the logic of the argument. Given statement A, can B be deduced. Here, whether B has taken place (or more to the point been reported and come to the author's attention) is less important.

It should be stated at the outset that the author's purpose is not to run down any specific rationale presented. The thesis is not in moral philosophy; nevertheless, given the fact that job design embraces the concept of man and his relationship with organisations which are themselves dominant societal institutions, any discussion is likely to appear, perhaps only to some, to suggest moral overtones. As said before, moralising is not the author's purpose.

11.8.1. Literature reported purposes of job design

The three constructs substantively involved in the discussion in this section are:

1. Purpose
2. Techniques
3. Outcomes

The diagram of Figure 11.5 is an elaboration to show meaning attribution to these three constructs in the context of job design. What the diagram endeavours to make explicit is that in the course of research, both literature and studies, two types of purpose could be discerned by the author. The recommendations for undertaking job design essentially are based on:

Ideological grounds
Gains

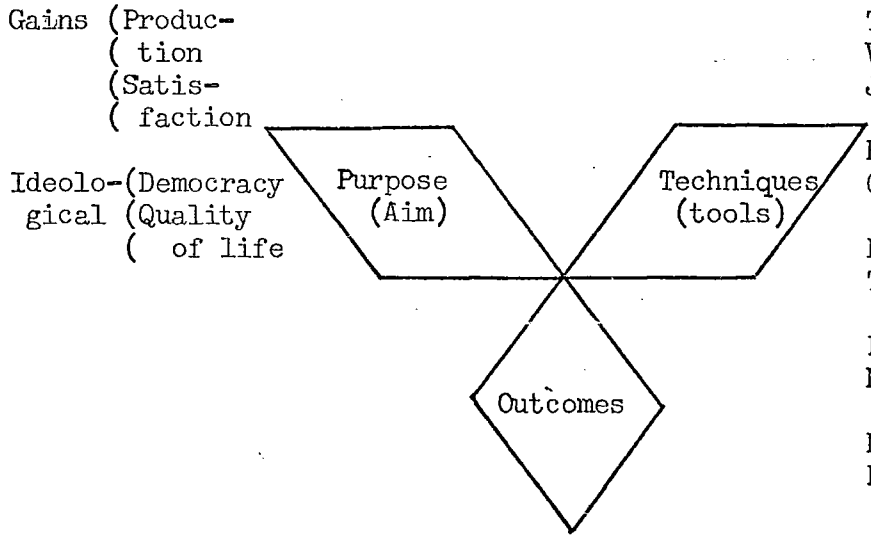


Figure 11.5: Aims and means of job design

The two are then the purpose or aims of job design. The means for advancing these aims are covered under the title 'outcomes', and some of the types of outcomes which have been aimed for in job design undertakings are listed. Thus the relationship between purpose and outcomes as stated above could also be interpreted as one of goals and sub-goals. Deductively, then, the achievement of sub-goals would lead, at least partially, to the listed purposes.

Under the heading of techniques are listed manipulations undertaken to achieve the outcomes that facilitate the aims, i.e. link the means and ends chains.

The ideological standpoints

The propellent for the democratisation of work approach is a political philosophy or creed. The work undertaken within this tradition can be conceptually classified under the following two classes which are essentially phases within an ongoing process.

1. The introduction or creation of the democracy within the work environment.
2. The resultant design, i.e. the effects on the design for jobs created under the aegis of the system contrived in 1. above.

Work undertaken towards edifice construction (under item 1. above) requires no further necessity-justification: the rationale is the credo itself. Within this phase, a typical exercise would start on the presumption that democracy should be implemented, extended or strengthened. At the end of the exercise, the extent and degree of prevailing democracy would indicate the success, or failure, of the exercise. The purpose of the exercise will have been served if more democracy obtains at the close than did at the beginning.

However, it should be noted that creeds often beget variants, and the concept of democracy is no different: the democracy of the Bundesrepublik Deutschland and that of the Deutsche Demokratische Republic are two examples from the current scene of variants of the political concept.

Work undertaken in the second phase would require that the design of the jobs should be in alignment with precepts defining the role of the individual, the role of the organisation and the relationships between these two. Thus the work in the second phase would involve both the creation of the initial alignment as well as latter realignments, if these become necessary.

Nevertheless, in the second phase, the work undertaken would involve resolving issues concerned with production and satisfaction.

Thus, democracy is a rationale; it provides and acts as a framework for the resolution of issues. What particular form the process of job design may take or what the product of such an undertaking would be, cannot be said; for the resolution of production and satisfaction issues, the particular variant of the political concept (for example, the direct democracy of the Swiss model, or the representative democracy of the Federal German model, or, still, the Peoples Democracy of the Socialist Germany model) would determine both the process and the product.

Deductively, from the above, the classification of a job as to whether it is well designed, or ill designed, would depend on the doctrine and practice of the particular paradigm of democracy being pursued.

Further, also deductively, the standpoint of democracy is not explicit

on the nature of 'job'. It is not explicit from literature in this field, whether a job is a contract between two equals, or whether indentured labour is involved, or still whether some form of slavery is involved. Note that indentured labour and slavery have both been used and practised, respectively, in societies otherwise claiming adherence to the democratic ideal. However, the foregoing remark is not mere criticism for it clearly throws light on another aspect of democracy: the process evolves to suit the particular needs of the circumstances for the society concerned.

The other ideological standpoint is that of quality of life. In essence this particular standpoint says that the human experience of work should be one of fulfilment. Thus, any political ideology, and specifically any variant thereof, could claim that they, in perpetuating their ideas, are improving the quality of life. Notwithstanding the claims that might be made, the strength of this ideology is that if one side attempts to improve the quality of its life at the expense of the other side, the 'total experience' would not be one of fulfilment.

However, the operationalisation of this ideology to the practice of job design is left undefined, i.e. neither the process of bringing fulfilment to the individual nor the product are defined.

The gains standpoint

At its basic, the standpoint of gains suggests that job design should be undertaken for improvements in design create rewards. From this standpoint the job is an artifact: it is like a machine. The work undertaken within this tradition takes the job extant as a given and characterises it. The characterisation is undertaken so that the variables thus defined can be manipulated, the purpose of manipulating the variables being to find out the combination (both the characteristics themselves and the loading on them) which produce outputs at levels better than the earlier ones. Thus, within this tradition a job would be considered ill-designed if outputs from it can be increased.

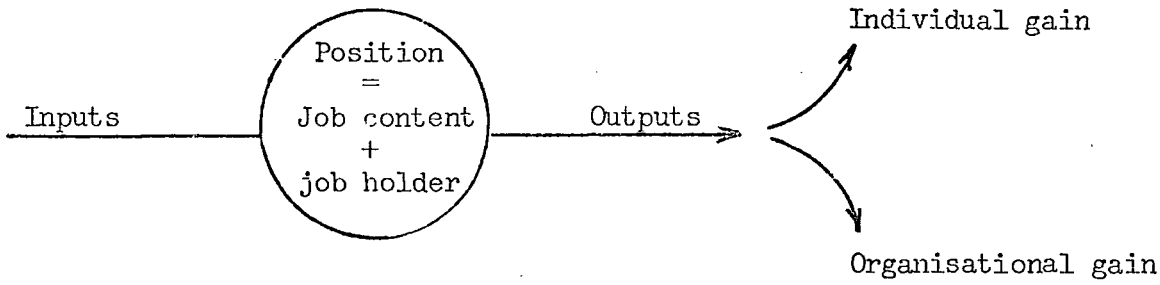


Figure 11.6: A mechanical view of the gains rationale

However, the standpoint fails to make explicit for whom the gains are destined: for the job holder, the organisation or both of them. Further, also not explicit is whether, when gains accrue for both the parties, the benefits split equally between them or in some ratio.

The need for having some guideline on this comes out clearly from Kelly's (1978) evaluation of job design applications. He was led to conclude that there was 'asymmetry' in the derived benefits: the substantive gain accrues more to the organisation than to the individual. The concept of 'asymmetry' can be viewed in two ways:

1. The improvements introduced in the design of jobs can result in:
   (a) For the individual - less discomfort
   (b) For the organisation - more profits, from the extra performance due to less discomfort.

   Thus while both parties could be regarded as having 'gained', the one gains in the realm of the mind while the other nets the profits.
2. Locke (1977) on the authority of Thorndyke (1917) and Poffenberger, discusses situations where the manipulation of job variables can cause

   'performance to remain constant or improve while the job holder's feeling of fatigue increases'.

   From this evidence the following analogy is drawn:

   An individual working, say, 40 hours a week and receiving £100.00, which he finds inadequate may face the following situation as a consequence of redesign:

(a) For the job holder - more money; more complex and demanding job say requiring a 50 hour week.

(b) For the organisation - the worth of the extended work undertaken by the job holder.

Another difficulty with this standpoint is that it is not made clear as to whether the agreement of both parties (the job holder and the organisation) is necessary for initiating job design or whether unilateral decision is sufficient.

Evidence suggesting the desirability of clarity on this point comes from many sources, e.g. Kelly (1977) and Parke and Tausky (1975), but for the present the argument will be elaborated in terms of two references, Grew (1964) and Kornhauser and Sharp (1932), from whom quotations have already been presented in Section 11.1.

1. Organisation unsatisfied

Grew's earlier quoted remark (Section 11.1) on many a satisfied worker being in the employment of only partially satisfied employers, depicts a situation where the job holder may not wish to have his job redesigned - he is satisfied. Should the organisation, being unsatisfied, initiate job redesign?

2. Individual unsatisfied

In their study Kornhauser and Sharp found some of the highest performances to have the most unfavourable attitudes. The situation described provides circumstantial evidence indicating organisational satisfaction co-existing with individual dissatisfaction. Should the individual, being unsatisfied, initiate job redesign?

That the above lack of clarity can cause difficulty in initiating job design is evidenced from Whitset (1971) and Bolweg (1976) both of whom mention guises adopted and illusions created to make the standpoint of gains acceptable to the two parties: individual and organisation.

Nevertheless, the rationale presents its own impelling reason for acceptance: why should activity be undertaken without any foreseeable gain?

Further, no matter what alternative rationale is finally adopted, some form of manipulation of the design variable would, in all likelihood, be necessary. And research pursued in furtherance of this rationale provides results which could be useful!

Lastly, as the job is regarded as an artifact, somebody has to suggest the particular output not meeting his level of acceptance. Thus job design undertaken within this tradition would essentially be reactive - it will be a curative process, where effort is directed towards pushing the particular output to acceptable level. A typical example of the curative nature of job design within this tradition can be presented from a job design implementation reported by Birchall (1978), who writes:

> "In early 1977 the Henley Work Research Group and the Petroleum Industry Training Board set up a project aimed at investigating the nature of motivational problems in clerical work and studying ways of overcoming their problems".

Just in case there is any doubt as to what transpired following his effort at the discovering of these 'motivational problems', Birchall and his collaborators not only did redesign the jobs but, further, as he himself states:

> "We have outlined principles for the design of jobs and work group organisations".

11.8.2. Contrasts

The Job Balances Theory of job design presented in Section 11.5 contrasts with the themes presented in the foregoing subsection in that no claim for immediate gains is forwarded - the process of redesign would be undertaken if jobs were found deficient or the quality of the design of the job and the direction of the redesign effort would be the creation of balances.

In Chapter 1 was presented the findings of Stanic and Pym (1968) which indicated some research chemists working essentially as laboratory assistants. This case will be discussed for implications arising from the acceptance of the wholistic theory.

1. At the level of the individual alone

The questions here are:

(1) Does the individual feel fulfilment with the assigned work?

(2) Does the organisation feel satisfied with the work performed?

(3) Does the individual receive rewards comensurate with his wishes?

(4) Does the organisation feel it is getting equitable rewards?

(5) Are resources available to the job holder comensurate with requirements for target/goal accomplishment?

2. <u>At the level of the individual in the context of other job holders</u>

(6) Do other job holders accept the performance-rewards contingency of the focal individual?

(7) Are the organisational and interdepartmental systems, procedures facilitative in performance of duties/roles/tasks allocated to the individual?

The point being made is the following: jobs have to be designed for individuals within the context of other jobs. The above series of questions to be asked serve only as examples of the type of balances required; the list of questions given above is by no means complete or exhaustive. To reiterate and underline the notion that balances of one job affect, and are affected by, the balances of the surrounding jobs, a case-like situation, based on the action research reported in Chapter 9 will be briefly presented.

Whereas the individual may assess the design of his job to be acceptable (at least on certain balances), other job holders, especially those holding jobs nominally carrying the same job title, or those at the same hierarchical level could find the title and rank of the focal incumbent as demeaning their own positions. And further, if the chances of promotion, etc. were seen by the others as being equal, i.e. the same for those doing jobs at their job title level as for him working below his job title level, then the resulting aggravation would, in all likelihood, be even greater than would obtain solely from considerations of job load.

The positing of the theory in terms of balances leads to the conclusion that, without knowing the ab initio situation, it cannot be said whether the act of job redesign will result in any gain; and in cases where gain does accrue, which party (i.e. the job holder or the organisation) would benefit, absolutely or proportionally.

Thus, in application of the proposed theory, in its intended organisational setting, effort is directed at creating balances. The outcome of jobs designed with balances in mind is mutually beneficial for the individual and the organisation - and this is due to the inter-twining of heuristics according to the equity principle. The propellent of the theory is thus the equity based shared (individual and organisation) heuristics.

A final caveat, something to which attention has previously been drawn, would be the unlikelihood of achieving stable balances in single jobs: effort should be directed at jobs design rather than job design. Support for this viewpoint would be provided from the analysis of Chapter 4 (the organisation), and Chapter 3 (the experience-in-job) for in the measurement of effectiveness, efficiency, sufficiency and equity, the basis of comparison and the final judgement on existence (or otherwise) of the balances is articulated on behalf of the organisation by the other job holders - who may be the boss, the colleagues or even the subordinates of the focal person. Thus the individual/organisation interface in practical application becomes individual/individuals interface. For the more complete argument on jobs design see Chapter 8.

The chapter following reports the inquiry directed at gathering empirical support for the wholistic theory of job design, one component of which is the job balances theory. The other components of the wholistic theory are: the theory of heuristics (Chapter 9), the concept of measures on the quality of design of a job (Chapter 6), and the methodology for job design (Chapters 8 and 9).

Post Script

A recent publication by Kraus (1980) in the Harvard Business Review indicates that, more often than not, managerial salaries bear no relationship with the work performed. This itself would be a strong recommendation for organisations to adopt job design as a method for rationalising their personnel policies.

Additional support for the specific theory of job design presented by the author comes from Doyle and Shapiro (1980), who on the basis of their carefully conducted comparative study report:

> "In studying the sales systems of four different companies, two with clearly defined sales tasks and two without, the authors discerned that sales people work longer hours on their jobs when the task is clear - when they see a positive relationship between their effort and results".

Two points of clarification with respect to the above quotation:

1. In the formalisation of the wholistic theory, the underlying relationship under discussion in the quotation is effort-performance.
2. Doyle and Shapiro mention only one specific method of improving the effort-performance bond - that of clarity in goals.

The diagram of Figure 11.7 depicts the conclusion regarding motivation to work, arrived at by Doyle and Shapiro. The diagram indicates that motivation to work is highest when the two balances hold simultaneously; motivation to work is the least when no balance obtain on either equilibrium. Where one balance obtains but not the other, the motivation to work is likely to be at some point between these extremes.

Note: The motivational links are notionally shown by the number of stars. (The higher the number of stars the higher the motivation		Adjustment on the performance-reward equilibrium	
		Balanced	Unbalanced
Adjustment on the effort-performance equilibrium	Balanced	****	***
	Unbalanced	**(*)	*

Figure 11.7: Levels of motivation to work in the balanced and unbalanced contingencies of the performance-reward and effort-performance equilibrium

Part IV

PART 4

For introducing this part of the thesis, a recapitulation of the work reported so far is necessary. In Part 2 of the thesis are presented themes from literature bearing on job design, as well as a review of the prevalent theoretical strands on job design itself. In Part 3 are reported studies which both helped the author to arrive at theoretical conclusions and underpin the theories themselves with empirical evidence. In Part 3, three theories were developed and these taken together, the author would argue, constitute a wholistic theory of job design. Each component of this wholistic theory serves a distinct function; between them the components provide:

- Measures of the quality of the design of the job
- A process for job design, which provides diagnosing features
- A definition of the key variables; adjustment of which needs to be contingently contrived.

The three components of the wholistic theory are new in the sense of being the products of the author's research.

The author felt it would be interesting and personally rewarding to obtain some managers' reaction to propositions relating to implementation concepts derived from his theory. Their reaction is described briefly in Chapter 12.

Finally, in Chapter 13, research process and methodologies are reviewed and reassessed; the results of the work are brought together and their linkages expounded; and the final conclusions of the author's research are set out for the reader.

Thus, this part of the thesis consists only of the following two chapters:

Chapter 12 - Managerial reaction to implementation concepts derived from theory

Chapter 13 - Research perspectives

Chapter 12

CHAPTER 12

MANAGERIAL REACTION TO JOB DESIGN IMPLEMENTATION PROPOSITIONS

Introduction

Overall, the research reported so far had produced three independent although conceptually interlinked, theoretical standpoints on job design. Each standpoint, progressively derived, constituted a necessary component for a wholistic theory of job design. The three necessary components are shown in Figure 12.1.

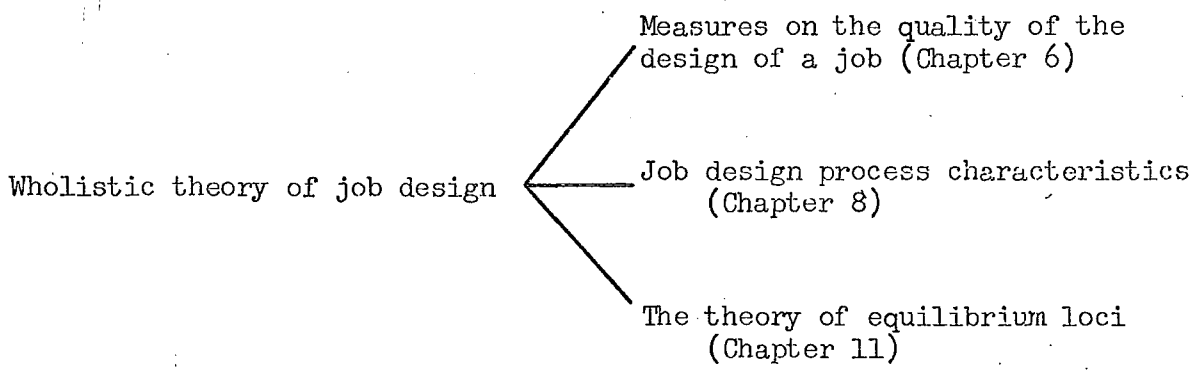


Figure 12.1: Components of the wholistic theory of job design

Literature evidence that was used in building the three theoretical standpoints is presented in Chapters 2, 3, 4, 8 and 11; and the arguments contained therein are therefore themselves, in turn, sub-components of these three standpoints.

The author decided to assess managerial reaction to a series of propositions which reflected the implications of the theory's possible implementation. These propositions emerged from the three components of the theory. Since the three components themselves have sub-components, the propositions presented to managers were derived from the concepts presented earlier.

12.1. Scope of the investigation

The propositions tested covered only limited areas of the author's wholistic theory. There were two main constraints limiting the investigation:

1. Requirements on respondent time:
   (a) Members of the pilot study panel (see Section 12.3) recommended that the questionnaire should take no more than 45 minutes to complete.
2. Time available for analysis:
   (a) The author envisaged recruiting no more than 100 respondents. This number of respondents would, given the nature of the questions asked in the questionnaire, yield data worthy of rigorous analysis yielding interesting insights into the extent to which managers would in fact choose to distinguish between the relative attractiveness of the propositions presented to them.

A questionnaire was developed which listed a number of propositions. Respondents were asked to indicate the importance to them of the proposition being 'true' in respect to any managerial job. Importance was ranked on an ordinal scale 1-5, where 1 indicated 'of no importance' and 5 indicated 'of the highest importance'. The intermediate scale points, 2, 3 and 4, indicated low, medium and high importance respectively.

Respondents were asked to indicate whether they were answering the questionnaire from the standpoint of a job holder (i.e. in terms of their own job) or a job designer (i.e. in terms of how they would deal with other people's jobs). To set the latter position in context, respondents were asked to state whether they had any managerial personnel reporting to them.

Given that individuals differ in the importance they attach to different goals, the likelihood of individuals opting for different strategies to achieve the same goals has to be accepted too.

The questionnaire was therefore designed to collect information which

would offer the possibility of relating the differences in the responses on the propositions with eleven variables which were also used in the studies reported earlier in Chapters 6 and 7:-

(i) Respondent's age

(ii) Whether the respondent regarded management as a moral occupation

(iii) The respondent's managerial orientation

(iv) The respondent's sex

(v) The respondent's length of service within the organisation

(vi) The respondent's hierarchical position

(vii) The respondent's function

The attitude towards job design within the respondent's organisation as manifested by responses to questions asking:-

(viii) Whether or not the appointment to the current position was in pursuance of a career plan for the respondent

(ix) Whether or not the respondent had received training prior to being assigned to the new position, to facilitate effective performance

(x) The level of knowledge of the work involved which the respondents had at the time of their appointment, compared with the knowledge, of the same, at the time of the study

(xi) If the job existed prior to their appointment, whether or not it were modified in any way at the time of their takeover

The questionnaire was pilot-studied with 11 volunteers representing a variety of organisations and hierarchical levels. A number of modifications were made arising from respondent feedback during the pilot study and the final version of the questionnaire is shown in Appendix 12.

The researcher obtained the co-operation of two large organisations which distributed the questionnaire to 15 and 16 of their managers respectively. In each case, the organisational contact selected managers representing a mixture of the 11 variables mentioned above.

Altogether 128 usable questionnaires were returned (a response rate of 61%). Questionnaire completion other than that from the aforementioned organisations, was achieved through respondent recruitment by a mixture of methods employed in the conduct of studies reported in Chapters 6 and 10.

The author regards himself fortunate that most of the 11 control variables were covered as well as they were - see Figure 12.2.

Unfortunately only six of the 128 respondents were female - a number so small as to render analysis on this dimension virtually worthless, and the functional classification used proved inadequate for the task - proving yet again the difficulty in pigeon-holding "types" of manager. Only 84 of the respondents used the researcher's functional classifications. 44 "wrote in" specific job titles. The third variable which proved unamenable to classification, in the same sense as the foregoing, was "nature of move at the time of position occupation". This variable was also dropped from its intended use in sub-analysis of proposition data.

12.2. The indicated relative importance of the propositions to the respondents

The respondents were requested to rank the propositions according to the importance they would attribute to the statements presented, with respect to any managerial job. (For the exact verbalisation see page 3 of the questionnaire). The mean value of the ranked importance of the propositions is shown in an histogram-like diagram in Figure 12.3. Note that within each column the proposition reference numbers (and the mean scores) are listed in an ascending order of the mean score, starting at the top of the column. Figure 12.4 contains a table supplementary and complementary to the histogram-like diagram of Figure 12.3. In this latter figure the propositions have been ordered by their reference numbers and not only are the means of their scores shown, but so too are the values of the standard deviations (SD). Those values of SD above 1.00 are underlined.

Those propositions having a low mean score tended to have a high internal variation in individual responses. For example, regarding a mean score of

less than 3.00 as being low, of the 6 propositions in the first column of Figure 12.3, 4 had a standard deviation of more than 1.00 (see Figure 12.4). High values of standard deviation denote polarity of viewpoints; thus while some individuals had attributed a great deal of importance to the proposition, others assigned it a fairly low score. Thus the proposition concerned with the potential comparison which a job holder may make between his own position and those holding similar positions in other organisations, received low support as evidenced from the proposition mean score of 2.89 (proposition reference number 24(a)(iii) in the questionnaire). A detailed look at the scores attached by individual respondents to this proposition reveals that:

(a) 20 participants marked it as being of 'high importance', (i.e. a score of 4).

(b) 7 participants marked it as being of 'very high importance', (i.e. a score of 5).

In a job redesign exercise, if the perspective emerging from this proposition were ignored on account of its low mean score, the above data provides evidence indicating the likelihood that the redesigned jobs would be found wanting by some job holders. (Approximately 20% in the case of the researcher's respondents).

The results in Figures 12.2 and 12.4 show:

(a) Managers can, and do, distinguish the relative importance to them of different propositions concerning job design despite the fact that all of them are prima facie desirable.

(b) The views held by one manager of the relative importance of a particular proposition may be significantly different from the views held by other members of his work group.

A job design practitioner needs, therefore, to assess the contingent relevance of different propositions to the focal manager and the focal manager's work group. Exploring differences of attitude within the group may help to generate a "trading" of job elements, leaving a better "job fit" for all. Failure to explore such differences would imply a use of 'sample', or 'mean' attitudes,

(a)

Age							Total
⩽25	26-30	31-35	36-40	41-50	⩾51	Missing	
8	26	34	21	25	14	0	128

(b)

Length of service (in years)						
⩽2	2-5	5-10	11-20	⩾21	Missing	Total
26	29	35	23	15	0	128

(c)

Position in hierarchy						Total
Top	Senior	Middle	Junior	Entry	Missing	
22	40	41	14	8	3	128

(d)

Length of position occupation (in years)						Total
⩽1	1-2	3-5	6-8	⩾8	Missing	
30	30	40	15	13	0	128

(e)

Degree of knowledge of job at time of appointment							Miss-ing	Total No. of responses
None 1	2	3	4	5	6	Complete 7		
3	12	23	24	42	17	7	0	128

(f)

Appointment in pursuance of career plan				Total
No	Yes	D.K.	Missing	
39	79	9	1	128

(g)

Received training prior to appointment			Total
No	Yes	Missing	
89	39	0	128

(h)

Job description modified at time of appointment			Total
No	Yes	Missing	
76	43	9	128

Figure 12.2: Data on eight control variables from the 128 study respondents

Note: In the questionnaire the following scale points were used

1 = of very low importance
2 = of low importance
3 = of medium importance
4 = of high importance
5 = of very high importance

Mean score over the 76 propositions = 3.60

6

Proposition No.	Score
22.a.v	2.56
32.vii	2.74
24.a.iii	2.89
30	2.94
31	2.94
26.iii	2.96

24

Proposition No.	Score
22.a.iv	3.09
27.iii	3.09
24.b.ii	3.10
22.a.i	3.13
33.iii	3.17
19.ii	3.19
26.i	3.20
32.viii	3.21
24.a.ii	3.23
32.v	3.26
33.i	3.29
13.iii	3.30
24.b.i	3.30
28.i	3.34
28.ii	3.40
34	3.40
33.ii	3.41
26.ii	3.42
32.iv	3.42
21.i	3.43
24.a.i	3.43
33.iv	3.45
21.iii	3.46
32.i	3.48

37

Proposition No.	Score
19.vi	3.51
20.i	3.51
27.i	3.51
24.b.iii	3.54
20.iv	3.55
24.b.iv	3.56
13.ii	3.59
22.b.i	3.59
21.ii	3.60
19.iv	3.61
23	3.69
19.viii	3.70
27.ii	3.70
17.iii	3.73
25.i	3.74
12.iii	3.75
25.iii	3.76
20.ii	3.80
19.v	3.84
15.iii	3.86
32.iii	3.86
19.iii	3.87
20.iii	3.87
25.ii	3.88
29.ii	3.88
13.i	3.89
22.a.iii	3.90
16.ii	3.91
15.ii	3.92
17.i	3.92
21.iv	3.92
22.a.ii	3.92
17.ii	3.95
15.i	3.97
32.vi	3.97
14.i	3.98
29.i	3.98

9

Proposition No.	Score
19.i	4.03
32.ii	4.04
18.i	4.05
19.vii	4.06
14.ii	4.14
18.ii	4.16
12.ii	4.17
16.i	4.19
12.i	4.45

Figure 12.3: Distribution of weighted means for the propositions

Proposition Ref. No.	Mean score	Standard deviation of score	Proposition Ref. No.	Mean score	Standard deviation of score
12(i)	4.45	0.57	22(a)(v)	2.56	1.19
12(ii)	4.18	0.73	22(a)(vi)	3.59	1.07
12(iii)	3.75	0.91	23	3.69	1.15
13(i)	3.89	0.80	24(a)(i)	3.43	0.92
13(ii)	3.59	0.83	24(a)(ii)	3.23	0.80
13(iii)	3.30	0.96	24(a)(iii)	2.89	0.92
14(i)	3.98	0.82	24(b)(i)	3.30	0.83
14(ii)	4.14	0.84	24(b)(ii)	3.10	0.81
15(i)	3.97	0.88	24(b)(iii)	3.54	0.81
15(ii)	3.92	0.81	24(b)(iv)	3.56	0.82
15(iii)	3.78	0.92	25(i)	3.74	0.99
16(i)	4.19	0.95	25(ii)	3.88	0.93
16(iv)	3.91	1.12	25(iii)	3.76	0.92
17(i)	3.92	0.84	26(i)	3.20	0.97
17(ii)	3.95	0.87	26(ii)	3.42	0.92
17(iii)	3.73	0.78	26(iii)	2.96	1.01
18(i)	4.05	0.74	27(i)	3.52	0.82
18(ii)	4.16	0.77	27(ii)	3.71	0.94
19(i)	4.03	0.80	27(iii)	3.02	1.07
19(ii)	3.19	0.95	28(i)	3.35	0.96
19(iii)	3.94	0.84	28(ii)	3.40	0.92
19(iv)	3.61	0.89	29(i)	3.98	0.88
19(v)	3.84	0.91	29(ii)	3.88	0.83
19(vi)	3.51	1.02	30	2.94	0.98
19(vii)	4.06	0.79	31	3.10	1.13
19(viii)	3.70	0.90	32(i)	3.48	0.89
20(i)	3.51	0.98	32(ii)	4.04	0.71
20(ii)	3.80	0.75	32(iii)	3.89	0.80
20(iii)	3.80	0.80	32(iv)	3.42	0.85
20(iv)	3.55	1.02	32(v)	3.25	0.92
21(i)	3.43	0.91	32(vi)	3.97	0.78
21(ii)	3.60	0.93	32(vii)	2.74	1.05
21(iii)	3.46	0.84	32(viii)	3.21	0.97
21(iv)	3.92	0.83	33(i)	3.29	0.87
22(a)(i)	3.13	0.97	33(ii)	3.41	1.05
22(a)(ii)	3.93	1.04	33(iii)	3.17	1.00
22(a)(iii)	3.90	1.05	33(iv)	3.51	0.92
22(a)(iv)	3.09	0.96	34	3.40	1.08

Figure 12.4: Means and standard deviation of the scores on the propositions

Note: Standard deviations above 1.00 are underlined.

and that could well lead to a situation where the alleviation of defects in the design of a job - through rectification along lines indicated by high-support propositions - could lead to situations where a previously relatively unimportant or ignored design defect becomes the focal point of friction between the individual and the organisation.

The data produced from this study was far richer than the researcher anticipated. Respondents not only filled up the questionnaire in the manner requested, they suggested between them a further 35 propositions as being desirable, and no fewer than 38 added statements were written in to the appropriate parts of the questionnaire. Respondents had clearly given considerable thought to their responses.

The author carried out several systematic analyses of the data, some of which are tangential to the thesis. The full results of these analyses is being prepared for publication elsewhere, but certain of the findings have a general significance in a thesis on managerial job design.

12.3. The control variables

One of the important analyses of the series assigned by the respondents to the implementation propositions was concerned with relating the responses back to the control variables. Only the more salient of these results will be presented here. However, before presenting the results a note on the control variables themselves would be in order.

On a priori basis as well as research documented evidence (see Campbell et al (1970)), there would be reason to believe that there would be inter-correlations between some of the control variables. For example, 'age' and 'hierarchical level of position occupied' are likely to be correlated, i.e. in a sample of managerial population one would not expect to find very many young executives occupying senior positions. Data from this study confirmed strong correlations between: 'age' and 'length of service'; 'age' and 'hierarchical position'; and 'length of service' and 'hierarchical position'. In

the rest of the discussion, unless otherwise stated, these control variables will be dealt with together.

On those control variables where contrasts in responses to the implementation propositions were found, the data indicated the following tendencies:-

(i) Age, hierarchical position and length of service. Those respondents maturer in age, higher in hierarchical position and having a longer service record tended to score the implementation propositions more highly than respondents younger in age, holding positions at the lower end of the hierarchy and having a shorter service record.

(ii) Modification in job description at position takeover. Those respondents who took over vacated positions and who received altered job descriptions on taking up the post, scored the implementation proposition more highly than those for whom the job descriptions were not modified at position takeover.

(iii) Training. Those respondents who received training to prepare them, prior to position assignment scored the propositions more highly than those who received no prior training.

(iv) The control variables 'career plan' and 'prior knowledge of job' did not produce clear cut results of the type just discussed. For example, while two implementation propositions were highly scored by those whose appointment was in pursuance of a career plan, four propositions were scored more highly by those respondents whose appointment did not follow a career plan. Similarly, inconclusive results were obtained for the 'degree of knowledge of job prior to assignment' variable.

General conclusions from the author's analysis of the questionnaire responses serve to reinforce earlier statements, i.e. for a job designer, contingent reality of the situation under focus is more important than any a priori principles.

A specific and firm conclusion emerging from the data is that support

for the implementation proposition was consistently highest from respondents who were mature, senior in hierarchy, with long service in the organisation. Since such individuals are clearly more likely to understand the job design problem and to have had experience of involvement in solving them, their views support the author's contention that the propositions are worthy of consideration by job designers.

Nevertheless, a suggestion emerging from the data would be the need for further research on implementation propositions on which control variables indicated athwart preferences. Naturally, in any study for furthering this research other control variables and other implementation propositions could also be included.

12.4. Differences in scoring related to the organisational affiliation of respondents

Briefly, the data from the two organisations indicated patterns in scoring which could not be explained in terms solely of the control variables, as discussed in the foregoing section. Comparison of data, on an inter-organisation basis, indicated that whilst the viewpoint adopted by the respondent (i.e. job designer or job holder) can be important, the prevailing atmosphere (and situation extant) in a given organisation may dominate the moderating influences of the control variables.

12.5. Conclusions

The study briefly reported in this chapter was conducted to evaluate the degree of support from managerial position holders for implementation concepts to underpin the wholistic theory of job design. The data indicated support for all the implementation propositions, indeed a very strong support for a large number of them.

Data indicated that no matter what prior support any implementation concept may have had, only the situational reality can determine which concepts have relevance and immediacy.

Notwithstanding the foregoing caveat on specific cases, a general conclusion from the study would be that implementation concepts such as those

used in this study could be incorporated by organisations into a job design charter.

It is possible that some organisations may already possess a job design charter (or its equivalent), although the survey reported in Chapter 6 indicated that this is unlikely to be the case with a vast majority of them. For those organisations already having a job design charter, a comparison with the propositions tested for support in this study could be valuable. For those organisations not having a job design charter but wishing to have one, the framing of it could be helped through adopting some of the propositions for which the strongest support has been shown in the current study. The adoption should be carried out in the light of the organisation's experience, its needs and its circumstances. The propositions used in the study could be modified to fit an organisation's culture without necessarily changing the substantive ingredient. Further propositions, reflecting other facets of the wholistic theory could be added, in accordance with the needs of the organisation.

The suggestion for adopting job design charters is based on the desirability of institutionalising job design practices evenly throughout the whole organisation. In other management areas where systematic, organisation-wide policies are known to pay dividends (e.g. in areas of accountancy, finance and technology) company-wide policies are adopted. Thus, the author's suggestion, based on evidence presented in Chapter 1, is a recommendation for extending an aspect of the personnel policy to the level of single jobs.

Note that the job design charter emerging from the incorporation of implementation propositions would be essentially of an operational type; no abstract rationale or loose and undefined (but seductively pleasing) concepts, e.g. 'raising the quality of life', or 'democracy' are involved. Yet, given the fusion of individual and organisational heuristics that should be achieved as the result of having a carefully expressed job design charter, all these outcomes are likely to emerge as a consequence.

Chapter 13

CHAPTER 13

FINALE: RESEARCH PERSPECTIVES

Introduction

The preceding 12 chapters provide both (i) the main literature reported findings that constitute the core material for the various perspectives on job design that the author holds as important, and (ii) reports on the work undertaken by the author.

Ironically, given the length of the thesis, the author finds himself with more unused material, more relevant learning from literature studied, more insights gained through discussions and debate with research participants and colleagues, than the material he has been able to put into the thesis.

In a thesis one can only summarise by choosing from the learning achieved through a fascinating, challenging, and at times difficult but ultimately rewarding period of research.

In this, the final chapter, then, the author's intent is to:

1. Provide overviews on the research undertaking as well as the research findings.
2. Present some perspectives on research (theory and methods) similar to but different from those of the author.

The chapter consists of the following six sections:

13.1 The argument of the thesis

13.2 An overview of research philosophy and study conduct

13.3 Techniques close to but different from those either developed or used by author

13.4 Measures and measurement

13.5 Assumption on the nature of the job

13.6 Overall assessment of work

13.1. The argument of the thesis

Within the body of the thesis arguments at various levels, and on different aspects, of job design have been presented. In this section two things are attempted:

1. To present a summary of the main arguments in proposition form
2. To present a brief overview statement

13.1.1. A summary of the main arguments in the thesis

1. The rationale for job design should be to ensure the following two types of balance within a job:

   (i) Balance between, on the one hand, the needs, wants and abilities of the job holder and, on the other hand, the needs, wants and resources of the organisation.

   (ii) Balance for the individual between his needs, his wants and his abilities; and for the organisation between its needs, opportunities and resources.

   Thus, the design of extant jobs would need to be evaluated (or measured) to find out whether conditions of imbalance exist. Job redesign effort would then be directed to creating balances where previously imbalances obtained.

2. The balance points for jobs are derived from four parameters of jobs, which are themselves linked (two apiece) to the two parties involved in a job contract. These four job parameters are:

   - Those derived from the individual:-

     (i) Inputs to job - the quality, quantity and timing of individual effort and commitment to job

     (ii) Outputs from job - the desirability of the quality, quantity and timing of the outputs

   - Those derived from the organisation:-

     (iii) Inputs to the job -

       (a) The nature of work allocated and the quality, quantity and timing of resources made available to job holder

(b) The quality, quantity and timing of rewards given to job holder

(iv) Outputs to job - the performance acceptability in terms of quality, quantity and timing

(Note: Seven balance points (or balances) are outlined in Chapter 11).

3. The principle of equity should be the governing factor in determining whether or not a balance exists. The principle of equity is applied at three levels:

(i) At the level of the individual/organisation interface, i.e. the job, where the job holder and the organisation are the main parties.

(ii) As a comparison, between single job holders and others holding comparable positions within the organisation.

(iii) As a comparison between groups of (or single) jobs within the organisation, and comparable jobs outwith the organisation. In this comparison the relative standing of the two organisations would also be a factor in the comparison.

4. The effort at redesign should be directed not only at achieving transient balances but should have future balances in perspective. By way of elaboration two specific items are presented:

(A) Accommodating change for both the individual and the organisation.

For the individual: If for an individual the following conditions obtain:-

(i) His inputs into the job are at the limits of his immediate skill, knowledge, level.

(ii) His current rewards are commensurate with his current input.

(iii) He would like to improve his skills so as to earn higher rewards.

then opportunities should be provided within the current design to facilitate a match between aspiration and current standing.

For the organisation: Training for movement to allow for changes in the nature of the work (job obsolescence) and changes within the organisation (expansion/contraction; resignation/notices; etc.).

(B) Respecting freedom. Neither the freedom of the individual nor that of the organisation to terminate the job contract should be curtailed, at any time or in any way.

5. The process of job design is:-

(i) Essentially a redesign process in which the unit of evaluation (or measurement) is a single job.

(ii) Such that single jobs cannot be redesigned (except where minor modifications are introduced). Thus, for job redesign an operational requirement is the delineation of the focal unit (comprising a cluster of inter-related jobs having more to do with each other than with jobs outside the cluster). As evaluation and redesign effort is directed only at the focal unit, no statement of either the state of the design or of the repercussionary effects of interchange can be made with respect to jobs outside the focal unit.

(iii) The rationale for job design being to ensure the existence of balances, the effort in evaluating the design should be directed at diagnosing the causes of a lack of balance, if such exists.

(iv) For diagnosing the lack of balance two types of information are required. The two types are:

- The experience-in-job of each job holder and, for each job holder the experience-in-job of the role-set corresponding to it.
- For each job, description of the job as perceived by the job holder and as perceived by his role-set.

Thus, the sources of information required for redesign are the job holder and his role-set.

(v) To facilitate and enhance accuracy in diagnosis, the information should be in the language of the job incumbents themselves since it is for them as well as for the organisation that the designs of jobs are evaluated and redesign undertaken.

13.1.2. A brief overview statement

1. Current organisational practices, typified by the use of different procedures for dealing with different aspects of the design of a job, could be regarded as at worst insufficient and at best ineffective for achieving balances in the design. Successful application of these procedures results in facet adjustments. Adjustments to the job through concentration on one facet at a time, (even though by taking one facet at a time the whole job may thereby be covered piecemeal), make the likelihood of achieving overall adjustment a chance occurrence. By adopting the job design process advocated by the author and using a wholistic theory of job design, the probability of achieving well balanced jobs would be that much increased.

2. Managerial job design should be a positive process based on theory related propositions which themselves, in turn, should be derived from the recognition that the design of a job is likely to meet greater acceptance than would otherwise be the case, where it simultaneously supports, and attempts to bring about, individual and organisation effectiveness and efficiency. The concept of equity is therefore of import.

3. For synthesis to be pro-actively undertaken, where pro-active undertaking would have the additional benefit of job design being invoked prophylactically rather than curatively, specialised systems for the collection of detailed personal and task information would have to be created and used on an ongoing basis. These systems, on account of their ongoing nature as well as for the fact that personal information is called for, would have to be accepted even if on a consensus basis, by those running and contributing to them. Further, because within organisations,

comparisons (say, on job load, remuneration, opportunities, etc.) are often the basis of individual and organisational expectation, institutionalisation of the concepts, systems and procedures would be necessary.

4. The information collected should be of a quality which lends itself to locating current, and foreseen, defects in the design of single and related jobs.

5. Within the body of the thesis are presented both:-

(i) a theory of managerial job design; and

(ii) a methodology and derived techniques for designing managerial jobs in a manner consistent with the theory.

For the author to arrive at the arguments within the thesis, as well as those contained in the conclusion, the research philosophy carried by the author, and which energised his research effort, is clearly of importance. The author's research philosophy is explained in the following section.

13.2. An overview of research philosophy and study conduct

That a social science research report is a product of the researcher's past experience as well as what he set out to do and how he achieved it, may to some be axiomatic. The author started his work on managerial job design after an earlier research experience. In the earlier research setting, on the first meeting the supervisor drew two circles on the blackboard, to represent the states of start and finish of the research undertaking about to begin. He drew a line between them to show the envisaged path.

The process of research was then explained, to the author, as one of making attempts to gather relevant evidence, master relevant techniques, generate own ideas and collect own data, all the time pushing the boundary towards the finishing line. However, and this was stressed, a research endeavour is a journey into the unknown. Therefore if at any stage a problem were encountered, the nature of which was such that its solution would require considerable effort, (say the deviation of the prescribed research period), and at the same time, its solution was necessary for moving forward

towards the earlier assigned goal, then at that point the researcher should end the research effort at the solution of the more immediate problem. The immediate findings could then be utilised by researchers aiming for the same intended finish.

The whole situation described above is shown in the diagram of Figure 13.1, where the broken line indicates (i) the difference between 'actual' and 'intended' finish, and (ii) how the 'actual' finish of one researcher can help subsequent researchers to arrive at the earlier intended finish.

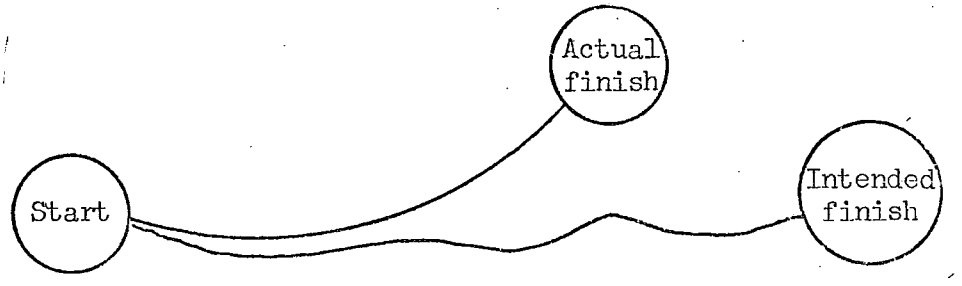


Figure 13.1: A Research Perspective

The purpose of narrating the above, earlier experience, is to set the scene for describing the spirit in which the research currently being reported was undertaken.

The job design research effort began with literature perusal. The facets covered within job design literature itself are numerous and the author's reading of the literature on 'the nature of the managerial job' and 'organisational behaviour' indicated the necessity of incorporating other facets into the theory, and methodology of management job design.

The perspective gained, by the author, from this stage of his work indicated to him the necessity of following the 'Grounded theory' approach to his own research. However, the author's own earlier research experience suggested that the work undertaken should follow a stepwise structure, where each study would build on the data and findings of the study(ies) preceding it.

For the studies conducted by the author, thus, an apt description would be 'Cascade Study Design', where study data led to theory building and theory building in turn led to further investigation. The remainder of this section, split into two subsections, consists of a description of the salient features and outcomes of this cascade approach.

13.2.1. Coherence of the studies undertaken with specific reference to those based on questionnaires

The first five chapters of the thesis present the essential arguments which prompted the author to conduct 4 questionnaire based studies and an action research study. While no questionnaire was used in the action research study, two questionnaires were used in one of the questionnaire-based studies; the other three studies each used one questionnaire. All but one of the questionnaire based studies, (the Heuristics study, Chapter 10, being the exception), were planned at the outset. Figure 13.2 summarises in tabular form the development and report sequence for the questionnaire based studies. Note the document number was printed on the cover, i.e. front page, of each questionnaire. The first four studies were planned in outline early in the author's research but the ideas for the Heuristics study emerged as a consequence of undertaking both the earlier four studies and the theoretical build up presented in Chapters 6 to 9. The Heuristics study in turn provided some

Document Ref.No.	Reported in chapter	Purpose of study
MJC/79/4	Chapter 6	Investigation of job design practices and method by which organisations attempt to achieve individual/organisation interface fit
MJC/79/3 MJC/79/2	Chapter 7	Investigation of job design primitives affected in modification to jobs
MJC/79/1	Chapter 12	Investigation of support for job design. Implementation concepts for the wholistic theory of job design
MJC/79/5	Chapter 10	Investigation of linkage between some job design constructs

Figure 13.2: The development and report sequence of the questionnaire based studies

of the arguments which give coherence to the theory of job balances presented in Chapter 10.

The author's planned interaction between theory and application throughout the research was put into practice for a period of over four years. Elements of an emerging theory were classified or polished as the result of insights gained by data (questionnaires, interviews or observation). In the first and the last studies only the questionnaire methodology was used. The first study provided the frame of reference within which observation and interviews could be sharpened and rendered more perceptive as a result of both wider reading and questionnaire response analysis.

It is difficult, therefore, for the author to separate the review of his research into neat and defined groupings such as literature, questionnaire results, interviews and observation since his research was not only based on systems thinking - the research process itself manifested a systems approach.

Nevertheless, the author wishes to review his research strategy in order to show the reader how the effect of this strategy is to produce a whole which is greater than the sum of its parts. This review is presented in the next subsection.

13.2.2. Feedforward connectivity and immediate conclusions from field studies

After an extensive literature review (reported in Chapters 1-5), the author came to the following conclusions:

1. Existing theories of managerial job design were based on 'deficient' criteria.
2. Existing theories of managerial job design were usually based on job characteristics, and were often stated in ways that conflated the criteria (measures) and the characteristics (the manipulatable variables of job).
3. The methodologies which were supposed to support the theories were oftentimes themselves deficient for the task.

Arguments which prompted the above conclusions were presented in Chapter 5. The connectivities between the various studies, organised with the Cascade Approach, will now be described.

An overview of the research undertaken by the author, together with the links between each element of the whole research is presented in Figure 1.8 (Chapter 1). The author will here briefly narrate the results of the pictorial plan presented diagramatically in Figure 1.8.

Altogether, including the action research, five studies were conducted. In the narrative to follow, each of these studies will be taken up in turn and a description will be given of its 'overall' contribution. In the discussion, the overall contribution will be split into two parts:

(i) Immediate outcomes

(ii) Contribution to succeeding studies

The purpose of adopting the above-mentioned, two facet, method of describing is to underline simultaneously, the stand-alone, and the connected, nature of the overall research plan. The word 'overall' is used only in a limited sense. The use is intended to facilitate the dichotomy: immediate and contributory. It is not intended to imply 'total'. For brevity, only salient items will be focussed upon.

I. The job design survey

The first study reported in Chapter 6 was the managerial job design survey. The immediate outcomes of the survey were:

1. Data indicating that organisations were more inclined towards endeavour to achieve the individual/organisation interface through recruitment/assignment than through job design.
2. Data indicating that within those organisations where job design was indeed attempted, the likelihood of some senior manager attempting to introduce and use the techniques of job design unilaterally was higher than the likelihood of job design being an institutionalised process.
3. Data indicating that job facet stability was being attempted through different processes and procedures in a large number of organisations.

Within these job facet stability processes are items such as job evaluation, MBO job descriptions, etc.

4. Information derived from the data collected which enabled the author to construct the measures on the quality of the design of the job.

The contributing value of the study to progressing the overall research effort was:

1. To the job modification studies

The concept of 'the measures of job' was tested in two ways:-

(i) Whether the reasons for introducing modifications to jobs were such that these could be mapped onto the measures of jobs.

(ii) Whether changes along the primitives or characteristics of jobs could be satisfactorily mapped onto the measures by the respondents.

2. To the definition of characterisation for the job design methodology

The study showed that, by and large, organisations suffered from a surfeit of managerial techniques which impinged on the shape of the job. It seemed likely, therefore, that job design as a concept would be accepted more readily in practice if the methodology for implementing it were capable either of replacing some present systems or at least complementing them, so that their own independent application was thereby rendered more effective.

The study also showed that in designing a particular job, the participation of others (e.g. boss, peer group, subordinates, etc.) was almost certain to be required. Therefore a methodology that permitted communication between the job holder and his role-set was more likely to serve the purpose of job design and thus find more ready acceptance than other methodologies.

3. To action research study

The survey indicated that individuals formed opinions of their own jobs through comparing their own job position with that of others; that they

looked to the present as a precursor to a job in the future; that interpersonal politics often shaded their views. Readings in organisational literature made the author realise that some of the problems emerging from the above-listed considerations may not get articulated to those in positions most likely to rectify them. Thus the author formed the opinion that in evaluating the design of a managerial job, a clinical-diagnostic approach could well be appropriate, at least initially. Further, the data had indicated that the job holders may well perceive senior management to be more concerned with outputs than with inputs, where inputs and outputs refer to the process of work, rather than to the job.

Literature on recruitment had indicated that at the time of entry into the organisation, it is likely to be the case that individuals are judged not only for appropriateness for the considered job but also for their suitability and fitness in the future. The data from the survey was construed by the author to imply that, at least in some cases, once the individual was within the organisation his suitability for a particular job might be less well thought through than was his suitability for the initial appointment.

4. To the Heuristics Study

Although this study was not initially planned, it both added to, and provided links between, the pool of ideas developing within the author's mind. In the interest of brevity - only two ideas provided by the survey will be presented, and then only briefly.

(i) The money facet of job. The study indicated a lot of individual and organisational concern for ensuring that remuneration was in alignment with the work done by individuals.

(ii) Organisational policies. To the author the survey indicated that for job design to become an integral and ongoing undertaking within an organisation it would be necessary to have an organisational job design policy.

The above conclusions were, however, at variance with certain existing job design theories - see Chapter 5.

5. To the definition of job balance points

The classification by the author of over three hundred primitives for characterising jobs and individuals, which led to the definition of the measures of job, also suggested that as some of these depicted inputs to the job (both from the organisation and from the job holder) and some depicted outputs (again both from the individual and from the organisation) some balances between them may well be necessary in a well designed managerial job. This statement is to some extent made with hindsight. At the time, the concept of balances was simply added to the pool of ideas in the author's mind.

Overall, then, the first study, the managerial job design survey, was exploratory; the data provided some immediate outcomes but, and this was more important, it provided the material sought for furthering the research. Another important aspect of this study was the realisation gained by the author that unless a researcher is seeking hypothesis validation, where he is looking for either the 'yes', 'no' or 'the degree of agreement with posited perspectives', there was a need to supplement questionnaires with interviews whenever possible. This conclusion was reached by the author through the difficulty experienced in the classification of data collected in the open-ended items. For this reason, an exception-based, random interview protocol was included in the design of the job modification study.

II. Job modification study

The immediate outcomes of this study (reported in full in Chapter 7), were:

1. The data supported the 'Measures of the quality of the design of a job' as a suitable set of constructs for their intended use.
2. The data showed that, in organisations having an organisation-wide job design policy, concern for the design of the job was likely to have such an influence on any modification made to jobs, that the quality of the design of managerial jobs was higher than in organisations not having such a job design policy.
3. The data on the job design primitives reflected on different aspects, most of which require qualification. However, the important conclusion, requiring no qualification, was that a theory of job design posited in terms of job primitives (characteristics) would always be incomplete, because the number of primitives in terms of which a job may be characterised is practically unlimited.

The conclusions requiring qualification are those related to how the changes (whether incremental or de-loading) on the primitive resulted in movements on the measure. The qualification required is that the changes were described but the ab-initio value remained unknown. Within this qualifying remark, then, the study showed some primitives having greater propensity for eliciting changes on the measures, and yet the degree of changes on the three measures, for a given change on the primitive, was different.

The contributing value of this study to other work will now be presented.

1. <u>To the definition of characteristics for job design methodology</u>

The data from the study clearly showed that redesign of a single job is most unlikely to be possible - only a group of jobs can be redesigned, and even here a 'transfer' (of work or people) may be necessary. This realisation led to the definition of the 3 units (the interchange unit, the focal unit, and the unit of measurement) of the job design process. The data from the study indicated that individuals preferred to have clarity in their job relationships regarding the expectations of their

role-set; they were also, to varying degrees, responsible for operationalising their own jobs. Such considerations led to the introduction of "permitting the job holder to explore the boundary of his job", as a desirable characteristic for the job design methodology.

2. To the action research study

The interviews with the respondents led the author to realise how difficult it sometimes is for individuals to pinpoint the reasons for the ills they perceive and experience.

Further, individuals often admitted that they had told the author more of their feelings regarding their job than they would dare articulate within their job environment. The author felt that the term job environment was a "cover-up term", for their colleagues often knew and shared some of the feelings. Therefore, the author interpreted that the reference was to open discussions with people occupying positions of higher authority - the very people, in other words, who were most likely to be able to effect beneficial modifications. Some of these individuals (the respondent class) having never been asked to air their views, had assumed that to do so under their own initiative would in some way be detrimental to their future wellbeing. Others having officially been provided with such opportunities could 'recall' what happened to the last person who accepted the official offer in good faith.

Evidence such as the above led the author to envisage the value in having an outsider (say an internal or external job design consultant) who could help in locating not only the imbalances in the design of jobs but also the causes of such imbalances. Such a consultant being distanced from everyday interactions with the role-set could bring a degree of objectivity to the discussion and finally could inspire trust.

3. To the Heuristics Study

The data from the job modification study clearly indicated increase in remuneration consistently, invariably, affected the job satisfaction measure

in a positive way, i.e. increased job satisfaction. However, this increase was greatest when the accompanying changes provided the job holder with greater control over his own work. On the other hand, control over work itself sometimes evoked negative effects on job satisfaction. Where this negative effect did occur, from increase in control, salary was not at the same time increased.

Thus, the data indicated that the relationships in the underlying variables of the Herzberg type, were likely to be of great import. At this point the author converged on the notion of the study to investigate the relationships between job primitives, which emerged as the Heuristics Study in Chapter 10.

4. To the definition of job balance points

Respondents clearly felt that certain balances should obtain within a job. This perspective comes out from the data discussion in the foregoing section but even greater support for the argument was gained from the interviews. In fact, the participants indicated a conceptualisation of balances so strongly that the author was led to expect demands of this kind in the action research study. One result of this study was to direct the author's literature perusal deeper into concepts of balances and equity.

III. Action research

The immediate outcomes of this study, (fully documented in Chapter 9), were:-

1. The author's conclusion that the research on the nature of managerial jobs (as reported in Chapter 3) (or the philosophies regarding the managerial job) were likely to be of only limited use in the design of jobs: either the level of abstraction would be so high as to reduce their utility, or the details contained therein would preclude comprehensiveness.
2. From the evidence generated during the research the author concluded that the Expectations Approach methodology, and specifically the job audit

procedure developed therefrom, the testing of which was one of the main purposes of conducting the study, was eminently suitable and appropriate as a methodology for managerial job design; undertaken in a clinical, diagnosing, setting. The author recommends its use in the envisaged settings depicted in the diagram of Figure 13.3. The diagram is drawn with two sets of people in mind, and considerations of overlap between these two sets of people. The two sets of people are:-

(i) the job holders for whom the jobs are to be designed;

(ii) job designers, the people who are responsible for the design.

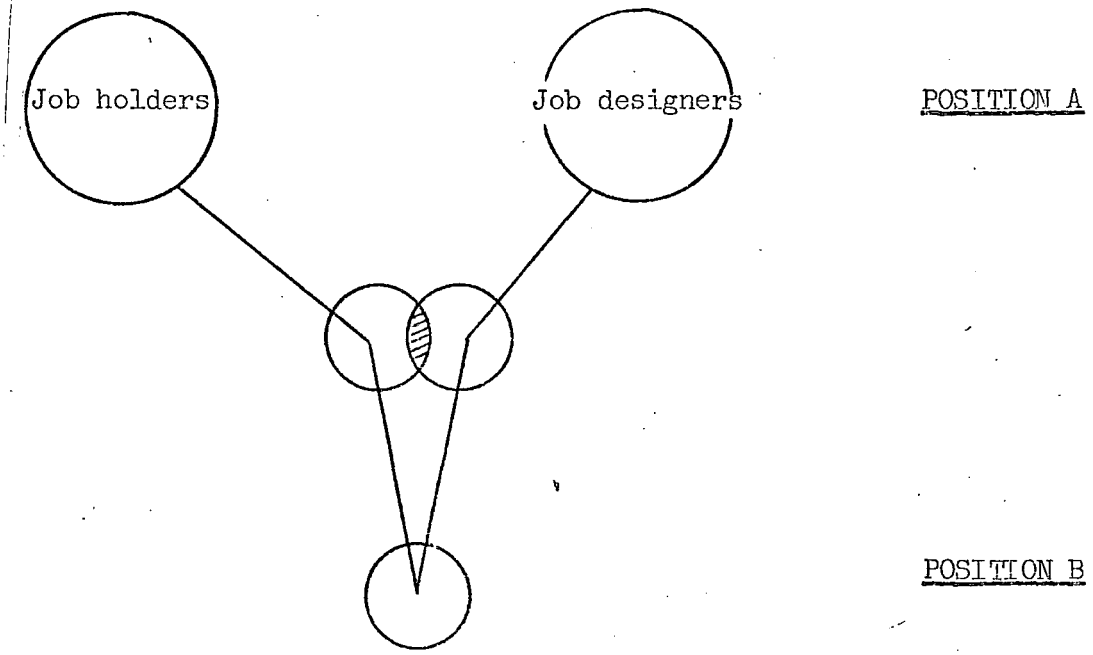


Figure 13.3: Settings for the use in job design of the E.A. based job audit procedure

In Position A, the job holders are not a party to the job design process. Position B shows a situation where job designers and job holders are one and the same people, i.e. individuals who require no external authorisation to introduce changes. Between these two extreme positions, any number of situations are possible; one such intermediate situation is depicted in the diagram.

It is likely to be helpful to use a consultant (internal or external) in situations where the overlap between the two sets (job designers and job holders) is less than total. A corollary to this would be that the greater the distinction between the two sets the greater the likelihood

procedure developed therefrom, the testing of which was one of the main purposes of conducting the study, was eminently suitable and appropriate as a methodology for managerial job design; undertaken in a clinical, diagnosing, setting. The author recommends its use in the envisaged settings depicted in the diagram of Figure 13.3. The diagram is drawn with two sets of people in mind, and considerations of overlap between these two sets of people. The two sets of people are:-

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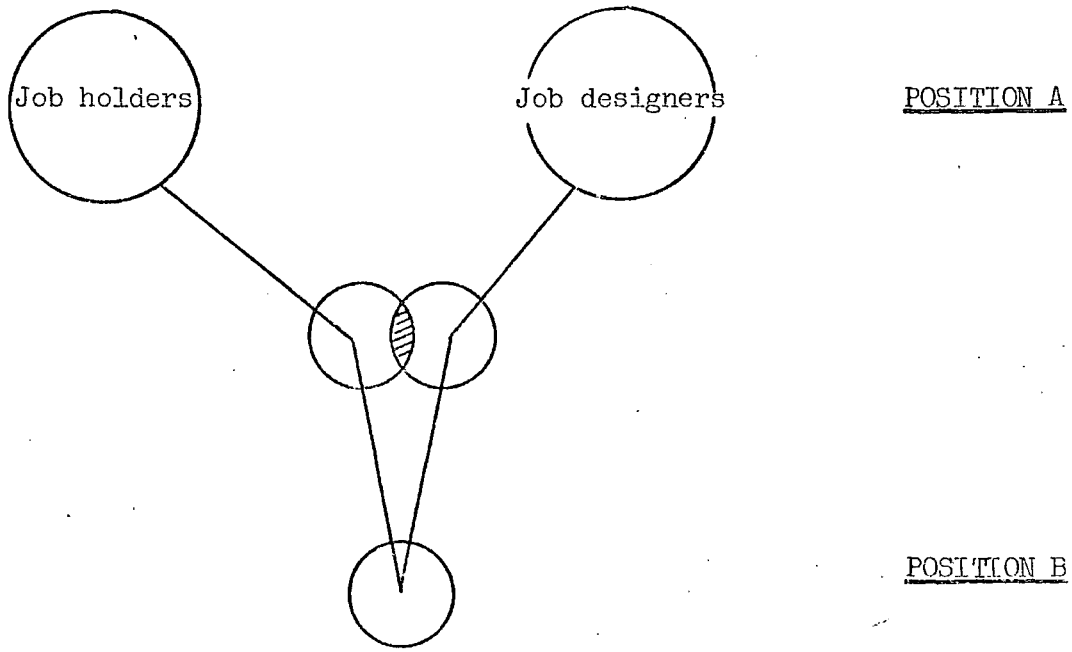


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It is likely to be helpful to use a consultant (internal or external) in situations where the overlap between the two sets (job designers and job holders) is less than total. A corollary to this would be that the greater the distinction between the two sets the greater the likelihood

for the requirement of a consultant.

(Note: the above model of settings and the explanation assume the application of the substantive elements of the author's theory of job design).

The contributory value of this study was:

(1) To the Heurstics Study

From the research effort, as well as in discussion with contacts established with those not immediately covered by the study (but who nevertheless had work related intercourse with the study group), it became abundantly clear to the author that individuals expect certain patterns within their job context and content: they 'know' that certain things are the likely outcomes of certain preceding events and conditions. For example, to get a promotion their successful work has to come to the notice of the superiors, but for this work to merit appreciation and recognition the boss has first to assign them tasks the accomplishment of which would require ability and ingenuity. Given the chain type of linkage just described, the author decided to undertake the Heuristics Study, the prime purpose of which was to investigate predetermining relationships envisaged by a sample of managerial position holders.

(2) To the definition of job balance points study

The study clearly indicated that the members of the researched group conceptualised the job as an artifact to which they, notionally, simultaneously affected their own and their organisation's effectiveness and efficiency.

The concept of balances, inherent to the notion of 'chain' discussed in the foregoing subheading, came out in other ways. For example, in discussions on the ability they possessed and that demanded by the work assigned to them the concept of balance is inherent. So also is it present in the juxtaposing of concepts like

(i) rewards commensurate with work

(ii) adequacy of the resources for successful completion of the task

Thus, the concept that for a job to be considered well designed balances with respect to certain parameters would have to obtain was firmly mooted.

IV. The Heuristics Study

This study was not initially planned but the momentum for it developed as the data and analysis from the foregoing studies progressed. The data from the Heuristics Study clearly indicates that organisational policies are the key to most ongoing activities which determine both the job contents and the experience-in-job drawn by the job holder.

It was clearly indicated that 'relationship with boss' (often verbalised as 'contact') was an important consideration in the way incumbents described the defects they perceived in the design of their jobs. The study clearly demonstrated the value of money:

(i) as a motivator

(ii) as a surrogate of recognition

(iii) as an outcome of achievement in job

Other outcomes of this study important to motivation research are noted in Chapter 11, where the study is fully reported.

V. The assessment of implementation concepts study

As clearly shown in Figure 13.2, this was planned as the last study. The planned purpose of this study was the investigation of support for implementation concepts (in the form of proposition), derived from wholistic theory of job design and related to the proposed methodology of managerial job design.

In this study a number of concepts which emerged from the previous studies were tested for acceptability.

Only a small set of implementation concepts were investigated for support. Data indicated high acceptability for all the propositions; indeed a very high degree of support for most of them. The fact that a large number of study participants wrote down their own proposals on implementation concepts indicated on one side the participants' interest in the study and on the

other, possibly, the vast number of ways in which imbalances can occur.

Concluding remarks

Having described how the data of each individual study produced results which were of immediate interest and how each study (save the last one) generated compelling evidence for the subsequent work, the section will be closed with the following two notes:

(a) The author's original research plan proved workable and flexible enough for the parts to draw from each other.

(b) The plan was sufficiently robust for the researcher to add a further study (i.e. the Heuristics Study), firstly, without undermining the original plan, and secondly, rather strengthening the original plan.

In the next section are discussed considerations entering into the choice of respondents for the questionnaire-based studies.

13.3. Overview of the methods of recruitment of study participants

Details of the method of recruiting respondents for the questionnaire-based studies are presented within the chapters reporting the studies. The author wishes here to discuss the strengths and weaknesses of the methods of recruitment used. Before discussing the particular method used for specific studies, the author deems it worthwhile to state the most important purpose of the studies undertaken:

the accumulation of succeedingly directed and detailed knowledge.

The above description holds for all the studies save the last in which the objective was the ascertainment of support for job design implementation concepts. As the thesis is devoted to management jobs, the fundamental consideration, for each study, was that the respondents be management position holders.

The method of recruitment for each of the questionnaire-based studies will now be discussed.

The job design survey

This study is reported in Chapter 6. The author delineated the essential characteristics required of the respondents to be:

> 'thinking, trained, knowledgeable of the topic and aware of the organisational events and processes'.

From this, one possibility was those employed to improve the quality of working life and effectiveness: Personnel, Development and Training Managers. The author, however, saw job design as a line, as opposed to staff, activity. In any case, the success of the staff activity could be evaluated by responses from those holding the line jobs.

The author, having decided against collecting information solely from Personnel or Development Managers, faced the task of contacting individual managerial position holders who would willingly participate in the survey.

During the development of the questionnaire, the author realised that, in the choice of participants, an important consideration was the nature of the information which the author wished to generate:

1. The questionnaire required an in-depth knowledge of the job-related issues within the organisation, as well as a reasonable knowledge of terminology in these issues. The issue of terminology was important for, for the respondent to say 'no' to a query (say, implying the particular job facet activity addressed did not take place in his organisation), he had first to understand what the author was seeking information on.
2. The pilot study participants had, by consensus, opined that the instrument, on account of its comprehensiveness, called for a lot of effort from the individuals completing it. Their conclusion was that the rate of questionnaire completion would be that much higher if those required to participate were well disposed and inclined to academic research.

(Note: Individual participants were not receiving anything in return for

completing the questionnaire, other than what they might learn through completing the instrument itself).

Thus, the prior requirements for the study were that the respondents be knowledgeable about possibilities of, and opportunities for, improvement and realising of the nature of problems faced within their organisations; at the same time, it was also the author's considered judgement that the respondents would need to be articulate, able, and confident enough to be able to describe their own thinking. Note that most of the items in this questionnaire were open-ended.

The use of the BGA register provided exactly the population the author sought. It contained a cross-section of hierarchical levels not available for example in the Institute of Directors' list (an alternative considered but discarded for the reason stated). The BGA register provided names and addresses (both business and residential) for its members. Further, the author judged that:

1. Individuals who had themselves gone through Business School would be more likely to be knowledgeable in terminology.
2. Individuals who had themselves gone through Business School training could be regarded as having a level of knowledge sufficient to decide on the importance and operational relevance of the author's research endeavour.

   (The author realised that this could well rebound on him if his work and his questionnaire were judged not to be relevant).

The potentiality of using the BGA register had to be balanced with the need for making the sample, in some way, representative of managerial job holders. How, and the ways in which as well as the extent to which, this was achieved through the process of anchoring the sampled population on the statistical information published by Her Majesty's Stationery Office is described in Chapter 6, and the Appendices linked to that chapter. In brief, the government published information on the number of jobs within each of its standard classification categories was used for drawing a roughly proportionate sample.

As a consequence of the above described procedure, the strengths of the particular method adopted are:

The sampled population is highly educated, specifically in management and therefore is likely to have understood the questions posited to them. From the data gathered, especially in open-ended questions and the open spaces provided, for specific to individual information, the estimate for completion time would be about 100 minutes. Thus respondent sympathy and empathy could be assumed as could knowledge of job design, and the job design facet, activity within their organisation.

The method of recruitment adopted, based on BGA register, while providing the strengths that the author specifically sought, may also, with respect to certain other aspects, be regarded as having the potential for introducing bias.

Before discussing the type of possible weaknesses that may be introduced, let it be reiterated that the study was <u>not</u> directed at establishing which particular method, style or facet of job or job design the respondents <u>preferred</u> but simply to determine current activity within their organisation with respect to the design of jobs.

The weaknesses would mostly emerge from the following two considerations:

1. Not all managerial position holders are likely to be Business School graduates, nor are all Business School graduates members of the Business School Graduates' Association.
2. While it is known that Business Schools themselves have entry criteria favouring certain types of entrants, it is not known whether subsequent to graduation these individuals gravitate to certain types of jobs.

A note worth injecting at this point is that with respect to the second of the above-listed items, the possibility of bias in sampling has been considerably reduced by the method of anchoring used by the author.

The type of weakness stemming from consideration of the first of the

above-listed items would be that based on the variable 'age'. While a business graduate is unlikely to be under the age of 22, a managerial position holder may be under that age. The upper end of the sampled respondent is also likely to be affected by the use of the Business Graduates' Register. Given that the development of business education in the U.K. is of comparatively recent origin, prima facie evidence would suggest that the respondents recruited by the use of BGA register, on average, are likely to be younger.

However, the author would like to point out the difficulty of analysing data on some variables, e.g. age, where difference may lie. Firstly, very few 'pure variable' analyses of the age of the managerial group are available. For example the Melrose-Woodman (1978) report under the title of 'Profile of the British Manager' is based on a sample of BIM members; and all managers are by no means members of the BIM. Secondly, and also with reference to the Melrose-Woodman report, the lowest cut-off age in most of the tables is 25 years; thus the majority of managerial position holders below the age of 25, are likely to be numerically (statistically) inconsequential, for the task at hand. Further, the same report also gives age data on business educated managers in industry: the sample contains business graduates above the age of 55.

The respondent sample data was analysed for other variables, e.g. size of employing organisation, and company ownership, but nothing suggestive of bias was evidenced. Nevertheless, the fact that a certain group was focussed upon, could have the propensity of introducing certain biases.

Overall, then, given the fact that the author's purpose was simply to gain knowledge of ongoing activity rather than building predictive models or elaborations on preferences, the author regards the particular method used in the recruitment of respondents to have served him well.

Job modification studies

These studies are reported in Chapter 7.

Job design survey had indicated that organisations could be classified on the basis of job design practices according to the following scheme:

1. Ad hoc
2. Unit
3. Corporate

For the purpose of recruiting organisations, the only study design criterion was that all the three types should be present. Appendix 7.3 gives the breakdown of organisations recruited, by type and the number of respondents, for each of the two complementary studies, from these organisations.

The acceptance of the organisation into the study was essentially on a first-come-first-accepted basis. For individuals within the organisation, the research imposed criterion was that only individuals holding the same jobs for at least two years should participate. Other than this, the study co-ordinator designated within, and by, each organisation was asked to choose the sample randomly. However, for those individuals requested to participate, the completion of the questionnaires was on a voluntary basis, i.e. those sent the questionnaire copy could refuse to complete.

In this study each organisation was promised reports from the data originating within it and on comparative data, originating in other participating organisations.

The possible weaknesses that the author sees in this method would be:

1. The study co-ordinator sending the questionnaire for completion on the basis of some criterion other than that which he was asked (and agreed) to use, i.e. foregoing the random requirements. So far as the researcher could ascertain the selection processes used by the company co-ordinators did produce the kind of sample which he had hoped to achieve.
2. Underlying patterns in the population of respondents. Once again taking age as a discussion variable, it could be the case, say, that more of older position holders participated than younger ones. Given the requirement of randomness in this is unlikely to have injected a

weakness in the design of the study; it would merely show that more of the younger managers are likely to have jobs modified more frequently, i.e. they do not hold the same jobs for more than 2 years.

Heuristics study

Four different methods were used in the recruitment of respondents:

1. The Accountancy Conference
2. The Chemistry Conference
3. Post Experience Course attendants at DUBS
4. Business School graduates

Altogether 125 respondents were recruited (response rate of 64%).

Given the fact that the study was inspired by Herzberg's work and Herzberg himself had only engineers and accountants in his sample, the author's method of recruitment was, comparatively speaking, catholic.

The sampled population is therefore likely to be high on education with respect to the 'average' managerial position holder. The weaknesses would therefore be similar to those that might emerge from the recruitment technique of the job design survey.

Response to implementation concepts study

Two types of respondents participated in this study. The two types were:

1. Corporate
2. Independent

By corporate type is meant that groups of individuals came from the same organisation. Actual numbers were 16 each from two organisations. The method of recruiting independent respondents followed the same procedure as that described for the heuristics study, except that only one conference, in engineering, was involved and that past participants of post experience courses were invited, as opposed to current participants which was the case for the heuristics study.

Thus, the likely biases in the responses received from the independent participants would be those associated with, on the one hand, the basis on

which organisation send individuals to attend post experience courses and, on the other hand, the type of organisation likely to be involved in post experience education.

13.4. Techniques close to but different from those either developed or used by the author

In the course of pursuing his own research, the author came across a large number of techniques which, due to their unsuitability for his own purpose, he discarded. Equally the author recognises that some potentially helpful techniques may have eluded him despite an extensive study of the literature.

The author chose the techniques he used in preference to others because he felt that they had most to offer in the context of his own research objectives.

In this section are discussed two examples of techniques which resemble in some ways the author's chosen research methodology.

Technique 1: Learning by knowing

Beckhard (1969) defines organisational development as a model for introducing planned change. But, as pointed out by Bennis (1969) organisational development is a "complex educational strategy intended to change beliefs, attitudes and structures of the organisation so that it can better adapt to new techniques, markets and challenges and the differing rates of change itself". Bettignier (1975) defines the same subject as, "the attempt to improve managerial effectiveness through a planned and deliberate learning process".

It is in the context of learning by knowing that Bennis reported a study where the technique used was somewhat similar to that used by the author for job audit (see Chapter 9). On account of Bennis's own authority and repute the case study (see Bennis (1969)) reported by him has become well known to students of management development.

In the study the subjects were split into two groups according to their service affiliation - administrative officers and foreign service officers.

Each group was asked to write words that would summarise their answers to the following three questions:

1. What qualities best describe our group?

2. What qualities best describe the other group?

3. What qualities do we predict the other group could assign to us?

Figure 13.4 carries a diagrammatic representation of the instructions to the participants, with respect to one group, say the administrative officers. Note the numbers on the arrows refer to the three questions listed above.

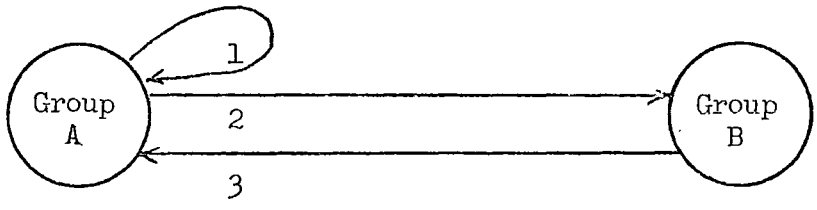


Figure 13.4: Diagrammatic representation of the Bennis system for eliciting 'images'

The purpose of the exercise was to reduce "unproductive divisiveness" between the two groups of officers. After the two lists had been prepared, Bennis writes:

> "The two groups assembled together and then proceeded to discuss their lists and to be questioned by the other group with respect to their perceptions. The discussion was intense, high pitched, noisy, argumentative, good humoured and finally, several hours later, thoughtful. It appeared as if each side moved to a position where they at least understood the other side's point of view".

In the study being discussed, diagnosis on divisiveness had been made, a priori. The two groups had got to loggerheads because of their work involvement. Participation in the exercise provided the people concerned the opportunity to verbalise the images they carried, on the basis of which discussion on the underlying ills could begin.

Thus in the above study, the main focus of the researcher's effort was that each side should gain an understanding, i.e. learn, of the other side's perspective. The starting point was the statements of images, carried by

each party and in the emergence of which the other party had played some role.

To the extent that Bennis reports the exercise a success, the mechanics could be surmised and the author's explanation is as follows:

> From the images, in the discussion, the parties would be led to disclose the reasons for those images. The disclosures are likely to be of the form and substance indicating false expectations, violation of legitimately held expectations, fuzziness in the very expectations held, etc., all within the context of the content of inter-dependence of work roles.

The diagram of the schematic arrangements of the author's job audit (see Chapter 8 Section 6) would be similar to that drawn for Bennis's study. The substantive differences include the following:

1. In job audit, thefocus from the beginning is on elements of the job. In Bennis's schema the initial focus is on personality images, and the ensuing discussion may or may not extend to the level of the job elements.
2. In job audit each individual nominates his own role-set, irrespective of organisation structure from the perspective of his own reasons for seeking to e stablish or describing the existing job related intercourse. Each individual is thus given the opportunity to be the focus of his own job. The statements of expectation emerging from this self nomination of role-set, is thus likely to be a product of such behaviour as labelled 'responsive' by Triest (see Chapter 5). That focus on job, in the manner described above, is likely to result in location as well as resolution of problems gets support from Moreno as well as Scott (see Chapter 8).

   In Bennis's schema the splitting into groups and merging of personality image descriptive statements for each group, generates the possibility of unresponsive behaviour. In the end, there is also the possibility that post discussion the individuals may go back with their images and views (held before the discussion)

only confirmed. Where the confirmation of images occurs on group aggregate basis, the purpose of the exercise would not only be lost but might affect the groups in a direction opposite to that intended, i.e. where divisiveness existed it might create greater divisiveness.

For the sake of brevity only two differences are presented; these, and other differences between job audit and Bennis's schema emerge from the following perspectives: group/individual; personality image/job element; high probability of responsive behaviour/undefined probability of responsive behaviour.

Technique 2: Kelly's constructs

Kelly (1955) made an outstanding contribution to the study of human behaviour with the purpose of facilitating disturbed individuals to achieve integration into society. The work of Kelly is outstanding not only for his philosophy and theory but also for his methodologies. The theory of Kelly is a psychological theory with its focus of convenience in the clinical treatment of the abnormal. The methodological techniques of Kelly were devised by him, and his group, either to elicit data from the abnormal (repertory grid) or to facilitate integration (fixed role sketch). The technique of repertory grid has, over the years, found its way into management literature through the behaviour literature. This section focusses on this technique.

Before discussing the technique a brief note on the Kelly's theory is presented, for this will prove helpful in the discussion of the technique itself.

Kelly suggests that each individual construes the events, and situations witnessed, uniquely and in a way that helps the individual to understand the present and advances the prediction of the future. Individual behaviour or actions are guided by concern to anticipate events.

Kelly developed the method of repertory grid (one of several methods used by him) as a diagnostic tool to help discern the psychologically abnormal

way the patient was construing events, and behaving.

Repertory grid technique, as used by Kelly, could be described as:

> The subject is given a number of designation of role holders with whom he is likely to have intercourse and is asked to consider the real individuals within his experience holding the role. Next, considering the listed individuals three at a time, the subject is asked to state the most important way he construes two of them similar and different from the third.
>
> From the statements of similarities and differences the clinician determines the psychological process propelling the subject's behaviour.

An important note, worth mentioning at this point, is that Kelly does not claim that the individuals do in fact "tell the truth", i.e. actually state the most important difference they really see.

Repertory grid has also been used as a data gathering technique for other purposes some of which will now be presented.

Kretch, Crutchfield and Ballachey (1962) discuss experiments, on determining multiplexity, conducted by Bleri and Blacher. Multiplexity notion could be explained as follows:

> "Some individuals have a simple, undifferential cognitive system relating to, say, religious objects and events. All religions are seen as alike; all religious people are grouped together without any differentiation. Other individuals may have highly complex and differentiated cognitive systems relating to religion. They may differentiate between "good" and "bad" religion, between Catholics, Protestants, Jews, Moslems, etc." They may differentiate the organised church from the spiritual creed of any religion; the rank-and-file members from the official clergy. These differences in the number and variety of cognitions incorporated in one cognitive system define the dimensions of multiplexity of the system".

Multiplexity would thus appear to be a useful notion to explain attitudes. When an individual comes across something new (and outside his domain of past experience) he attempts to construe it in terms of something known (see Kelly (1955)). The expected outcome of such attitudes would be behaviour that reflects the promises and problems not of the new thing but of the things with reference to which the construing takes place.

Grosvenor (1981), a fellow researcher at Durham University Business School, uses the repertory grid technique to study behaviour changes following intervention. The promise of Grosvenor's work lies in his adopting the cybernetic model of cyclic interaction between attitude and behaviour as opposed to attempting to interpret where one leads to the other. The work is still in its early stages.

Stewart and Stewart (1976) report the use of the repertory grid for deriving construct profiles of effective and ineffective managers. The characteristics derived are used in developing measures for effective behaviour (see Brodie and Bennett (1979)). The author was able to acquire the Internal Report (1978) on a study using the repertory grid as depicted above. The value of this study to the host organisation is summed up as follows:

> "Problems of interpretation are difficult but it is noticeable that there is very little about money in the constructs produced by the Section Managers and rated by their superiors, not much about technical activity, very little (on) contact with bosses, rather crude constructs about team work and little about quality. On the other hand there seems to be stress on action orientation in ambiguity. Certainly this last seems to distinguish most clearly between the effective and ineffective managers though of course there is less agreement (on) what constitutes an ineffective Section Manager compared with a very noticeable agreement about the effective one.
>
> As a purely personal footnote, what we seem to have obtained from this study is to me the most accurate description of the Division of Reward system that has ever been adduced".

(Note: In the above quotation the word "on" has been injected in two places to make the text readable).

From the above quotation, note should be taken of interpretations of the constructs remains as allusive as in psychotherapy - the original use of the repertory grid. Secondly, given that 'money' related constructs were not much in evidence in the data; from reading the report one can only deduce that rewards related interpretations must have been adduced by some other, and further, manipulation of the original data.

Stewart and Stewart's (1976) recommendation of the repertory grid would be for purposes of training, in much the same way as the original use of

the technique by Kelly: teach people to construe events differently and along dimensions of behaviour known to be more effective. However, note that while as a generalisation the construct derived notions of effectiveness may be acceptable, attempts to superimpose them in judging specific behaviour without recognition of circumstances leading to noted behaviour (ineffective) would be unsupportable. More detailed arguments on this aspect are set out in Chapter 3.

The author feels that some methods of collecting data for repertory grid research represent a verbal variation on the critical incidents method, first used by Flanagan (1951) and later by others e.g. Herzberg et al (1959), for when an individual is asked to state how two people are similar and yet different from the third, where all three belong to the role-set, the likely way for the subject to articulate would be in terms of critical incidences of the past. For the critical incidence methodology see Chapter 3.

Elaborations on the use of the repertory grid, in the interest of brevity, will be stopped here. Next the author will discuss the implications of the above narrative in the context of the thesis.

The word 'construct' has been rather extensively used in the report of the heuristics study, in Chapter 10. In common with the repertory grid therefore the author's heuristics study raises questions such as:-

1. Does it get at how people actually think, and how could it be tested?
2. Would a retest show that people made the same links (as they gave as participants to the study reported in Chapter 10)?
3. Could the repertory grid have been used instead of the particular technique adopted by the author?

The above three only indicate the type of questions raised. Beholden to the research tradition that demands attempts at clarification of points raised by one's own research endeavour, the author will now attempt brief clarification on the above queries.

1. As techniques for gathering data, neither the repertory grid nor the author's own method, are of the type or nature which could support assertions that 'actual thinking' would always be elicited.
2. Repertory grid was devised by Kelly to ascertain subjects' conceptualisation at one point in time in order to help them to modify their abnormal constructions, i.e. a shift in conceptualisations was regarded by Kelly as a desired and hopefully possible outcome. The use of the repertory grid in management training is derived from the same rationale. Thus, for those individuals for whom a change in their conceptual system for construction is deemed desirable, if the same results obtained at the retest as on the initial test, the psychotherapy or the management training will have been proved ineffective.

Furthermore, explicit to the way Kelly propounds his theory of (the Psychology of Personal) constructs is that psychologically healthy individuals through building on their own learning, modify their construction systems. The acceptance of this viewpoint indicates that one should not expect invariance in the response data, from the same participant, at two different points in time. Changes in the way individuals construe their environment are a function of the rate at which opportunities for the review of already held construction system become available. Those individuals who between the initial participation and the retest participation witness situations requiring modification to the held viewpoint may well modify it. Thus tests designed to catch specific facets of construction system at two, or more, points in time may therefore produce data where the initial test data is different from the retest data. For reasons similar to the ones discussed above, in connection with the repertory grid, the data on construct connectivity acquired by the technique used by the author in the heuristics study may alter from 'test' to 'test'.

3. The heuristics study conducted by the author has its origin in the author's desire to understand and build upon the work of Herzberg. As the study by Herzberg was based on descriptions of critical incidences which either produced a "high" or a "low" feeling in the respondents, it could be argued that Herzberg had used a type of repertory grid. From his clarification of the data, Herzberg found certain constructs to be more often associated with high, while certain other constructs associated with low, feelings. The heuristics study besides providing data which could, more or less, be classified a-la-Herzberg, provides explanation of why this is likely to be the case. To answer the question on whether the use of repertory grid could have provided data from which conclusions of the type arrived in the heuristics study were possible, a direct answer would be 'NO', but with the following proviso added:-

   In Chapter 2 has been quoted a statement (Campbell and Pritchard (1976)) to the effect that clever parametric manipulation of one motivation theory can be made to precipitate its transformation with another motivation theory. Further, in certain uses of the repertory grid, the author sees shades of the critical incident methodology developed by Flanagan (see Chapter 2). The notion behind the thread of argument is that the author does not completely rule out the possibility that some clever manipulation of the repertory grid technique of data gathering might just make it possible to derive data of the type permitting conclusions arrived at in the heuristics study.

Similarities with other research paradigms, methods and techniques

Only two techniques have been discussed here. Still, other researchers working in related fields may see other commonalities of the work reported in this thesis with their own work. For example, the predetermining relationships between the constructs in the heuristics study have been depicted by the author

diagrammatically, according to concepts developed from graph theory. The author was introduced to graph theory while a student of Mathematics/ Computer Science. In a discussion on the heuristics study a fellow researcher informed the author that what he (the author) was doing had already 'been done' by sociometricians. A bit puzzled but curious the author made a side-track into sociometric literature and found interesting perspectives, one of which, that due to Moreno, has been referenced in Chapter 8. However, and more to the point, on reading about sociograms, the author asked the aforementioned researcher whether she was referring to sociograms. Yes, indeed, she was! Examples of sociograms can be found in standard texts on Sociology and Social Psychology; for those needing a short paper, the one by Sherif (1966) would suffice. For the sake of conceptual closure, let it then be stated that the heuristics study has nothing to do with sociograms; the only similarity found is in the schematic representation.

The author has tried in this section of his final chapter to demonstrate that the methodologies he has used have similar strengths and weaknesses to those used by other researchers in the field and that his final choice of methodologies was specifically chosen to meet the needs of research into the development of better, operationally relevant, ways of undertaking purposeful managerial job design.

Apart from methodologies and techniques the author often found in his discussions with other researchers that the concept of measures and measurement often needed elaboration. The next section is devoted to providing an elaboration on these concepts within the context of the thesis.

13.4. Measures and measurement

When something is to be consistently evaluated, (especially when systematic evaluations are called for a number of times, perhaps even by different people and with time intervals between each evaluation) stipulation of the criteria to be used is a foremost requirement. Drawing from Campbell et al (1970), it could further be added that criteria definition should be adequate, i.e. neither too 'excessive' nor too 'deficient', for the task at hand.

Constructs stipulated as criteria for evaluating an item are often referred to as measures of that item. For example Bennett and Brodie (1979) discussing the work of Stewart and Stewart (1976) on Managerial Effectiveness write:

> "The work carried out by Stewart and Stewart (1976) on the characteristics of effective and ineffective managers, uses the repertory grid as a basis from which to develop measures".

(Note: Emphasis has been added).

What Stewart and Stewart do, in fact, is to build criteria situationally for the evaluation of effectiveness as opposed to taking some a priori concepts and then applying them to any and all situations. However, the purpose of presenting the above quotation is to show how criteria once stipulated as suitable for evaluation can be referred to as measures.

Note, however, that criteria for which measurement can be on the fundamental dimensions (e.g. length, mass and time) are not so treated; only constructs adopted as criteria are so conceptualised. For example, height is often used as an entrance criterion for recruitment into the Police Force. As height itself can be evaluated only on the measure of length, it would be unusual to refer to it as the 'measure of entry'.

So, in conclusion, a construct stipulated as a criterion for evaluating an item is the measure for that item. Note should also be taken of the consideration, and one that comes out clearly from the above quotation in reference to the work of Stewart and Stewart, the use of the term 'Measure'

is especially appropriate when more than one criterion could be set up for the evaluation of the same item. Each criterion is then a measure.

The definition and adaptation of the criterion as a measure requires that the process for evaluation be defined. Support for their conceptualisation could be drawn from Longford (1979), who in her review of managerial effectiveness literature includes a section on the criteria themselves which is followed through by a section on methods of measurement.

The relationship between the measures and methods of measurements could be explained with reference to the work of Val and Andrew Stewart (1976) as discussed by Longford (1979). The Stewarts use, among others, 'Decision-making' and 'Management of Time' as their 'Measures of managerial effectiveness'; in order to perform the measurement along these measures, they use questionnaires, observation, repertory grid, and ratings by peers and bosses.

The above abstract discussion will now be related to the work reported in the thesis. The author found concepts depicting ways of "looking" at a job, to be numerous. Researchers have often referred to such concepts as: characteristics, components, dimensions, attributes, variables, etc. The author's conceptualisation of job design indicated that a necessary requirement was the delineation of a set of characteristics which could be used as measures (see Chapter 5). The job design survey revealed over 300 characteristics that were being used in the designing of jobs. These, together with others found in literature, were classified by the author and the deductive abstraction led to the determination of 3 characteristics (job satisfaction, contribution to organisational purpose, ability utilisation) of jobs, which the author labelled as measures on the quality of the design of a job (Chapter 6).

The segregation of the measures facilitates the job design process, for now the other characteristics can be regarded as manipulatable variables (see Chapter 6). Evidence to indicate that the conceptualisation in terms of measures and manipulatable variables was indeed viable was generated in

the job modification studies reported in Chapter 7.

Thus, the three measures of the quality of the design of a job are in fact the criterion variables. Within Chapter 6 is explained why these measures should be regarded as non-additive; that is, a high value on one will not compensate for low value on another. Briefly, the basis for the non-additive argument is similar to the everyday use of say, the height and body weight of people as joint (though not exclusive) determinants of the state of their physique.

Having defined the measures of the quality of design of the job, the author labelled the other characteristics as primitives, for these facilitate manipulation which effects changes in design which can be evaluated by the earlier defined measures.

13.5. Assumptions as to the nature of job (and work)

The author undertook research in management because he holds certain beliefs about the effective use of time and resources - both his own and of others.

Finally, therefore the author wishes to conclude his thesis with a discussion of the implicit assumptions made by him on the nature of job and how the concept of job differs from that of work.

As jobs exist in organisations and are held by individuals, certain assumptions as to the nature of jobs are in fact assumptions regarding the nature of the organisation and the nature of man. Lengthy discussions upon these topics are presented in Chapters 2 and 4, and the reader is referred to these chapters for details; here will be discussed briefly those items the author deems of immediate concern. The assumptions about the nature of man and the nature of the organisation will be stated prior to the statement on the nature of jobs. The difference between 'Job' and 'Work' will be discussed as the last item in this section.

The assumption on the nature of man and his behaviour

The author's assumptions on the nature of man are those implicit in the accountancy model of (the behaviour of) man, given in Chapter 2. The model assumes that behaviour can be explicated in terms of three attributes of man:

1. His needs
2. His resources and potential
3. His weltanschauung/the decision mechanism

From these antecedents the model posits that the behaviour is complex and that what an individual strives for, at any one moment in time, may be his final goal or an operational goal the achievement of which, in the opinion of the author, is likely to facilitate the accomplishment of some higher level objective.

The model also assumes that the only mechanism for need fulfilment is expenditure of resources: where at the basic level the resource required is time and conscientiousness. A corollary of this assumption would be that some individuals may attempt resource accumulation so as to be able to meet future needs, which themselves may even remain, to some extent, presently undefined.

The complex activity pattern which is likely to emerge from the above assumptions would be directed at maintaining values, fulfilment of needs through resource expenditure and attempts at modifications in the resource base so as to fulfil future needs. These activities, in turn and alternatively, could be labelled as function of a citizen, family man and the witness of events unfolding around the individual. The assumption on the latter mentioned unfolding events is that the individual, on the one hand, interprets these from the perspective of his extant weltanschauung, and on the other hand, these events also go towards building this weltanschuung.

The acceptance of the above Model of Man has implications, among others, for the responses given by, or elicited from, an individual, on a topic. When a query is presented to an individual he could respond in the following,

among other, ways:

1. Respond in accordance with what he actually thinks, given a specific level of understanding of the query.
2. Respond so as to project himself, given his understanding of both the initial query and the possible repercussions emerging from his own response.

The same query put to the same individual after a lapse of time may elicit a different response. The explanation for this difference in response would be in terms of the learning and growth experienced by the individual in the elapsed time, i.e. the changes in his weltanschauung.

The foregoing discussion is at the level of individuals. While changes in the individual's response, even those amounting to a volte-face could be expected and should be accepted, changes in aggregate response (i.e. mean response over a large number of individuals) are likely to be more slow. The essential explanation for the slowness in changes of aggregate response would be that while an individual changes his perspective in one direction another may change his own in the diametrically opposite direction. Thus the aggregate response is likely to change more slowly than individual responses (if the individual responses do change), unless unidirectional changes occur across the whole sample population. Unidirectional changes over the sample population would result in the changes in the aggregate response being equal to changes in the individual response.

From the perspective of the research reported in this thesis, the above discussion suggests:

1. The near impossibility of separating the responses given by study participants, into classes such as 'real' and 'projective'.
2. The near impossibility of all subjects having given specific responses at one point in time.

The second of the above conclusions is important from two perspectives.

1. It could be independently derived from considerations of open system theory; and

2. Differences in response elicited from a respondent, at two points in time, does not on, and of, its own provide evidence indicating any weakness in the methodology used.

At this point in the discussion, an example may help to make more explicit the earlier discussion and thereby facilitate the latter conclusions.

Suppose the subject of research is whether people worship God or Mammon, and the data is collected by directly putting this question to a set of respondents. Now, for any specific respondent it could not be said with absolute certainty whether the response given (whatever that might be) were based on conviction regarding himself or based on consideration of what he wanted to project regarding himself, i.e. how he wanted others to judge him. Additionally, were it the case that some of the possible responses in the response domain (in the example, the response domain consisting of two items: God and Mammon) could be construed by the respondent as likely to result in detrimental effect on himself. The possibility of projective response would be that much increased. Note that the perceived determinental effect could itself be in any domain, e.g. loss of image, material loss, or even physical harm.

To continue the discussion through building on the example provided, focus will now be shifted to a specific area where establishing the facts, as opposed to acceptance of responses elicited from direct questioning, is considered all important.

In countries where the practice of justice dictates that an individual is innocent unless he himself admits his guilt or is proved guilty through evidence, brought before those empowered to pass judgement, onus lies with the prosecution to provide this said evidence. Under these circumstances the case, for and against, the respondent is built by the method, among others, of getting the respondents to state the circumstances, events and relationships relating to the event and deed under discussion. That is to say, primary data is collected from which, inferentially, deduction can be

made regarding the focal event or situation.

Note that, under the above described court situation, at neither the direct nor at the primary data level can it be asserted that the method of inquiry will prevent projective responses. Nevertheless, the accumulation of primary evidence does lead to decisions on whether the case is proved or left unproven.

This section was started by narrating some of the assumptions made on the nature of man and his behaviour; the last few paragraphs deal with a specific area of behaviour - that of participant in a research situation. The discussion on this aspect of behaviour was necessary on account of its specific and special relevance to the thesis.

Assumptions on the nature of organisations

The organisation is a de-jure and defacto entity. Implicit in its factual existence is the presence of some rationale that led, in the first place, to its founding and, in the second place, that nourishes its continued existence. Thus the defacto existence presupposes the existence of implicit or explicit goals for the organisation. A currently held conceptualisation of the organisational goals is that the goals of the organisation, at any one period of time, are the goals of some human coalition that dominates it at that period of time. Note that the de-jure status of the organisation itself begets certain goals for the organisation and may, additionally, require that certain aims and objectives be upheld in the definition of all operational goals.

The foregoing statement indicates that all members of an organisation may not be members of the dominant coalition, and therefore have no influence in the definition of the 'organisational goals'. Thus the conceptualisation of the organisation as given so far while suggesting that the achievement of the organisational goals could be regarded as the fulfilment of the goals of the dominant coalition, still leaves far from clear how those within the organisation but not having membership of the dominant coalition achieve their

objectives. Here the inherent extendability of the dominant coalition standpoint, facilitates understanding through the line of reasoning discussed next.

Firstly, to remain dominant the so-called dominant group itself would internalise, to some measure, the goals and objectives of those not within its membership. This line of argument suggests that goals of the fellow-members (i.e. members of the organisation but not members of the dominant coalition) get incorporated with the goal structure of the organisation through the organisational will to continue.

Secondly, the fellow members of the organisation achieve their personal objectives through achieving the operational objectives of the organisations.

Before moving on to the next salient, from the job design perspective feature of organisation, the perspectives presented in the foregoing discussion will be summarised. Organisations are entities with de-jure and defacto status and direct their effort at goal accomplishment; the goals are such that, at least on an aggregate basis, the organisational related goals of each member are to some measure recognised and legitimised. The final limiting factor to the recognition and legitimisation of an individual's goals within the organisation is the de-jure charter of the organisation itself. As the organisation is an agglomeration of individuals each with a different degree of ability and will to contribute, among the tasks the organisation should attempt are those of ensuring that:

(i) each individual's own goals are fulfilled to the extent of his contribution, and

(ii) each individual contributes at the level he wishes.

The next salient feature of organisations is resources. Let it be said at the outset that practically anything, whether a physical entity or a construct, can be regarded as a resource, i.e. the real estate the organisation owns or rents, the morale of its employees, the customer loyalty and trust it has created, the level of financial support it has generated, the range and type of its products, etc. can all be regarded as resources in

one context or another.

Thus substantives which facilitate the achievement of primary objectives can be categorised as resources, and within this category would come the ability and potential of the organisations' employees as well as the public acceptance of its aims and objectives.

From the resource perspective the activities undertaken by the members of an organisation could be posited to be: the building, the maintenance, and the prevention of decline, of the organisation's extant resource base, while engaged in the achievement of its primary objectives. Note that some members of the organisation may be involved solely in one of the above-mentioned types of activity, e.g. building the resources, etc.

Given the above exposition, while the output of each member has to be measured (for quality, quantity and timing) and guided, the organisational inputs to each member would require control. The argument for control over inputs could also be built from consideration of limitedness of resources available to any organisation, in the face of the multitude of tasks and methods that could possibly be used.

From the above discussed perspectives for an individual, a job is likely to be of value and esteem to the extent it fulfils his personal requirements, some of which may be to have their endpoints with the work itself but some could be of the facilitative type which permit the other desired experiences of life.

Nature of job

At the fundamental level a job is a swap-process: each party to a job contract gives, or at least promises to give, to the other party something in return for some contribution. Note, however, that in discussions of job, more often than not, the implicit assumption is that the job "does not terminate", i.e. continuation is implicit. This consideration should explain the reason for its earlier description as a "swap process" rather than a "swap event". The foregoing statement is not intended to deny the existence of jobs with limited tenure, rather the implied direction of

thought was on the process rather than the event orientation of jobs.

Another way of regarding jobs, and a way offering conceptual complementarity rather than athwartness, is to see it as a transformation mechanism: the job team forms the inputs, both those of the individual and those of the organisation, into output for each party.

The acceptance of the above conceptualisations on the nature of jobs, offer the possibility of extending the level and domain of analysis. For job design, considerations of immediate concern would be that:

(1) the inputs of each party be those desired by the other; and

(2) the outputs received be relevant to and valued by the recipient;

(3) be considered fair, i.e. in some proportion to the inputs rendered, by each party.

The dimensions of measuring desired inputs would be quality, quantity and timing. Further dimensional riders could also be imposed on these basic ones; for example, those of relevance and pertinency on that of quality.

The conceptualisation of job as a transformation mechanism permits and levels itself to the analysis of effectiveness and efficiency of the design of the job. In engineering when energy is transformed from one type to another, of concern to the designer are the effectiveness and efficiency characterisation of the transformation machinery. The application of the transformer analogy to jobs would entail determining: firstly, whether the two sides regard the job as fulfilling their intended purposes (for the job holder it would be the purposes for accepting the position, and for the organisation the purpose would be related to the creation of the position); secondly, whether the two sides consider the outputs to inputs ratio, at the immediate level, acceptable and at the next level, fair.

The difference between work and job

While the concepts of jobs and work can be differentiated, in the vernacular use of language the concepts often get conflated, i.e. the difference between these concepts get blurred. However, for the purpose of

this thesis, clarifying would be advantageous. In this short sub-section, the concept of work is defined first and then the discussion endeavours to show the difference between this concept and that of job.

In the Geigy Scientific Tables (1970) in the section on Physical Units of Measurement the concept of work is dealt with as follows:

> "Energy, work and amount of heat are physical quantities with the same dimensions and ideally should be measured in a common unit ...."

The cited publication defines the dimension of work to be "L^2MT^{-2}", and discusses the coherent and noncoherent units of measurement for work as a physical quantity; in the International System of Units the unit of work is the Joule.

The above exposition suggests that the concept of work relates solely to the input of energy. Within this rendering, an animal (say, a horse) could do work, a machine could do work and equally a human being could do work.

Although the concept of work is totally defined above, some further elaboration may be found useful. An elaboration would be the type of activity or the end towards which energy gets expended. The types of statements:

- I am mowing the lawn
- He is washing clothes

show the type of activity in the understanding of which energy is being expended. Note that from the above type of statements, it is possible to discern the immediate purpose of energy expenditure - a cut lawn and clean clothes. Other statements may indicate only the mode of energy expenditure, without even the immediate purpose of activity becoming clear. Example of a statement indicating expenditure of energy in the mode form would be:

- They are walking up the hill, towards the church

The difference in the conceptualisation of work and job is essentially that whereas the former is based solely on measurement of energy input that of the latter involves consideration of output as well. Note, therefore, within

the context of job some form of work, performed by the job holder, will always be involved.

That the word "job" evokes a multitude of connotations, such as

- piece of work, especially done for hire or profit;

employment; post, etc.

has been stated in Chapter 1. Also mentioned in Chapter 1 was the Newman and Rowbottom (1968/73) conceptualisation which involves 'work on demand'. Together these conceptualisations would exclude from the concept of job work given out to outsiders, e.g. consultancy and contract work and the honorariums therefor.

In line with the distinction between the concepts of work and job, as elaborated above, some of the literature discussed in Chapter 5 has been labelled as work design rather than job design. Research undertaken on work design follows essentially the ergonomic tradition except that not only the physique but also some elements of the psyche are given recognition. The rationale of ergonomics, in its application to work design, is to bring the operations of work to within human abilities. Thus work which prior to application of ergonomic engineering could be regarded as leading to stress or boredom would, on successful application of ergonomic enginering, be made less stressful or boredom inducing.

In work design, although attention is focussed on the job holder inputs, the organisational outputs since they are a function of job holder inputs get manipulated at the same time. Work design tradition could therefore be regarded as one which attempts to make the work more manageable for the job holder, but in doing so the outputs for the benefit of the organisation get automatically increased unless, of course, the job holder through an act of will starts expending less effort than prior to ergonomic intervention.

Note, however, that job design as a research paradigm subsumes work design, i.e. job design includes work design but additionally involves adjustments to the job holder outputs from the job and organisational inputs to the job.

Overall assessment of the work

In this subsection, then, the author will give an overall assessment of the work reported in the thesis.

There are two features to the research reported in the thesis. The thesis reports:

1. The development of a theory of job design
2. The application of a methodology which facilitates job design, according to theory.

In Chapter 5 while discussing Taylor's theory of job design, a viewpoint (that of Braverman (1974)) was presented to the effect that Taylor only distilled the then prevalent movement into a coherent philosophy. The author, in evaluating his own work would say that he himself has done no more than attempt to distill the various prevalent thoughts, based on research findings, into a coherent philosophy and theory of job design. These remarks apply to the theoretical work reported in Chapters 6 and 11, where the term 'Job design' is focussed upon for its substantive meaning, i.e. the measures and parameters of jobs.

From the earlier discussion on measures and methods of measurement (Section 13.4) it should be clear that important as the definition of measures is, for the concept to have utility, it must be supported by some method which facilitates measurement. In the case of job design the method must, further, facilitate movements in the job content and context so as to effect a new alignment of parameter values. Here again, the author would evaluate his own work as distilling the concepts of import in applied job design and, firstly, laying them down as required characteristics for job design; secondly, testing a methodology having the required characteristics in action research.

The work reported in Chapters 8 and 9 is thus methodological. In those chapters the author introduces the definition of the characteristics required for a methodology which would support the theory and later describes the

application of a methodology judged to have the required characteristics.

The concepts of fairness and balance that the author has utilised in the building of his own theory of job design are not purely the products of his own personal views on, and of, life in general and jobs in the specific. To the extent that any theory, or any work, is a product of the individual's own way of looking at things, the theoretical perspectives on job design within this thesis are to the same extent reflections of the author's subjectivity. But no more. Concepts of fair pay (even felt fair pay) and the dysfunctional effects of overloading or underloading job holders are well discussed in literature, and references to these have been provided in the various chapters.

The data collected, integrated and consolidated provided the grounds for the theory. Thus the author regards his own work as consolidation of the currently prevailing thoughts into a cohesive philogophy, and presenting a methodology (tested by him) which facilitates job design.

Personal experience and learning

Up until now, the discussions presented have had bearing on substantives other than the author himself. That as a consequence of undertaking research, over nearly five years, some shift in attitude arising from the experience derived, is likely to emerge, would be axiomatic. In this section, the author briefly describes his own experience of research, the outcomes personal to himself, and the spirit with which he undertook the research.

As a person who commenced his research period after training in Physics, Mathematics, Statistics and Computer Science, the current research activity has involved learning the ability to grasp social concepts where laws and rules (of the kind obtaining in pure science) do not obtain. This has resulted in the author having to develop the ability to write about concepts, having first harnessed material read, observations made and having analysed and synthesised the material through his own faculties. Thus, the author believes that he has developed, through this research period, a number of skills and a wealth of knowledge. The author's challenge now is to harness

his learning of the managerial task and job design to the thread of his personal life.

The work reported in this thesis was undertaken in the tradition and spirit of Muslim scholarship. The hallmark of this tradition is pursuit of learning - for its product but even more so importance is attached to the process. The tradition places high regard, nay honour, on modesty and dedication.

The work reported in this thesis is the author's attempt, firstly, at arriving at a wholistic theory of job design; secondly, developing and testing a methodology which facilitates the design of jobs in accordance with the derivatives of the theory. Although job holder acceptability of the derivatives of the theory was found to be high and the methodology worked during test, these can only be regarded as pointers indicating a promise, as only the test of time with many applications can prove the real worth (or worthlessness) of the theory.

The End

Appendices and Bibliography

CONTENTS

Analysis and synthesis of managerial jobs: job design

APPENDICES AND BIBLIOGRAPHY

In the main body of the thesis references to appendices have been made in Chapters 6, 7, 9, 10 and 12. In this part of the thesis presentation of the appendices is followed by the presentation of the Bibliography. Before presenting the material itself the structure will be explained.

The Appendices

A structured system, based on the chapter number to which the appendix (or appendices) belong, has been adopted.

Where a chapter has only one appendix, the appendix has the same number as the chapter, e.g. Appendix 10 and Appendix 12.

Where a chapter has more than one appendix, the appendices have been so numbered that while the primary designator is derived from the chapter number, the secondary designator is the sequential number for the appendix within the chapter. For example, the four appendices to Chapter 6 have been numbered: 6.1, 6.2, 6.3 and 6.4.

Pages within each appendix (and where an appendix has a number of items, each item) are numbered independently.

To facilitate referencing, yellow separator pages have been inserted between appendices belonging to different chapters. The yellow separators, moreover, provide further details on the contents.

The Bibliography

The author devised a computer based system for keeping track of his references. The system consists of four small programmes, written in PL1,

and the use of the sort utility (which is called four times). It is not a very sophisticated system but has been found useful, and is being used by, other researchers, besides the author, in the Business School.

In its currently available version, the system uses capital characters only. The discipline imposed by this restriction is as follows:

Names with an intermix of capital and small letters, e.g. McConkey, are carried in the system as MC.CONKEY.

Appendices to Chapter 6

Contents:

6.1 Questionnaire used in Survey.....pp 11.

6.2 Table showing the contrived equivalence between BGA and Statistical Office classifications.....pp 3.

6.3 Selection Procedure, Response Rates, Associated Costs and Defacing.....pp 6.

6.4 Integrative Classification for Functional areas to which Job Design application was reported.....pp 1.

Project:

Effective Job Design

for

Managerial Positions

Questionnaire:

Job Design Practices

On completion, please return
the questionnaire to:

M. J. Chaudri,
Durham University Business School,
Mill Hill Lane,
Durham.
DH1 3LB

If you have any queries,
please telephone:

Jim Chaudri on
(0385) 41919 Ext. 59

document MJC/79/4

Demographic Data

1. Overall size of employing organization, i.e. number of people employed:

   i. less than - 500 ☐
   ii. 501 - 1,000 ☐
   iii. 1,001 - 5,000 ☐
   iv. 5,001 - 10,000 ☐
   v. 10,001 - 20,000 ☐
   vi. 20,001 - 50,000 ☐
   vii. more than - 50,000 ☐

2. How would you describe the business area of the organization:

   i. production ☐
   ii. research ☐
   iii. trading ☐
   iv. services ☐
   v. Others, please specify:

   _____ ☐

3. The ownership of the organization:

   i. British ☐
   ii. Foreign ☐

4. How long have you been with your currently employing organization:

   i. less than 2 years ☐
   ii. 2 - 5 years ☐
   iii. 5 - 10 years ☐
   iv. 11 - 20 years ☐
   v. more than 20 years ☐

SECTION A

7. Does your organization have job (position) descriptions for managerial level employees:

☐ no 1 ☐ yes 2 ☐ don't know 3

If no or don't know, please go to question 8.

a) Do <u>all</u> managerial level employees have job (position) descriptions:

☐ no 1 ☐ yes 2 ☐ don't know 3

b) Are the following elements included in the job (position) description:

		YES	NO
i.	outputs from the job holder	☐	☐
ii.	inputs to the job holder	☐	☐
iii.	the process(es) to be employed by the job holder to convert his inputs into outputs	☐	☐
iv.	the quality required of each output	☐	☐
v.	the quantity required of each output	☐	☐
vi.	the timing required for each output	☐	☐
vii.	the quality required of each input	☐	☐
viii.	the quantity required of each input	☐	☐
ix.	the timing required for each input	☐	☐
x.	the resources available to the job holder	☐	☐

c) Are any other elements included in job descriptions. Please list:

i. _____ ..... ☐

ii. _____ ..... ☐

iii. _____ ..... ☐

ii. In the development of Job Description for Senior Management do the following participate:

	No	Yes	Don't know
- job holder's boss	☐ 1	☐ 2	☐ 3
- job holder's colleagues	☐ 1	☐ 2	☐ 3
- job holder's sub-ordinates	☐ 1	☐ 2	☐ 3
- A job design specialist, please specify: _____	☐ 1	☐ 2	☐ 3

iii. In the development of Job Description for Middle Management do the following participate:

	No	Yes	Don't know
- job holder's boss	☐ 1	☐ 2	☐ 3
- job holder's colleagues	☐ 1	☐ 2	☐ 3
- job holder's sub-ordinates	☐ 1	☐ 2	☐ 3
- A job design specialist, please specify: _____	☐ 1	☐ 2	☐ 3

b) Who takes part in the appraisal (tick the relevant box(es)):

i. the boss of the job holder ..... ☐
ii. the sub-ordinates of the job holder ..... ☐
iii. colleagues dependent on the output from the job holder ..... ☐
iv. A representative of the personnel function .... ☐

Others, please specify:

v. _____ ..... ☐
vi. _____ ..... ☐

c) How often is performance appraisal conducted:

- more than once a year ..... ☐
- once a year ..... ☐
- as often as found desirable by the boss ..... ☐

Others, please specify:

_____ ..... ☐

_____ ..... ☐

d) Are training needs established at the time of performance appraisal:

☐ no 1 ☐ yes 2 ☐ don't know 3

9. Do you have a job evaluation scheme for managerial level employees:

☐ no 1 ☐ yes 2 ☐ don't know 3

If no or don't know, please go the question 10.

a) What causes a job to be re-evaluated:

i. There is regular re-evaluation of every job .... ☐
ii. When the job-holder requests a re-evaluation ..... ☐
iii. When the job-holder's boss requests a re-evaluation ..... ☐

Others, please specify:

iv. _____ ..... ☐
v. _____ ..... ☐

b) Which of the following individuals are invloved in the objective and/or target setting process, please tick:

i. the job holder's boss ..... ☐
ii. the job holder's sub-ordinates ..... ☐
iii. the job holder's colleagues ..... ☐
iv. those who are due to receive the job-holder's outputs ..... ☐
v. those who are due to supply the job-holder with inputs ..... ☐
vi. a representative of the personnel function ..... ☐
vii. Others, please specify:

_____ ..... ☐
_____ ..... ☐
_____ ..... ☐

c) How are the objectives and/or targets documented. Please tick the appropriate boxes:

i. In handwriting ..... ☐
ii. Typed by the job-holder's secretary ..... ☐
iii. Typed by another secretary ..... ☐
iv. Held on computer file ..... ☐
v. Others, please specify:

_____ ..... ☐
_____ ..... ☐

d) Which of the following hold copies of the job-holder's objectives and/or targets:

i. The job-holder's boss ..... ☐
ii. The job holder ..... ☐
iii. The job holder's sub-ordinates ..... ☐
iv. The job holder's colleagues ..... ☐
v. Those who are due to receive the job holder's outputs ..... ☐
vi. Those who are due to supply the job holder with inputs ..... ☐
vii. The personnel function ..... ☐
viii. Others, please specify:

_____ ..... ☐
_____ ..... ☐

12. Does your organization use Manpower planning for manager level positions:

☐ no 1 ☐ yes 2 ☐ don't know 3

If no or don't know, please go to question 13.

a) Is an industry-wide manpower availability taken into consideration when deriving your organizational manpower plans:

☐ no 1 ☐ yes 2 ☐ don't know 3

b) Are succession plans for managerial level employees linked with organization manpower planning:

☐ no 1 ☐ yes 2 ☐ don't know 3

c) Are the recruitment practices of individual work units within your organization linked to the organizational level manpower plans:

☐ no 1 ☐ yes 2 ☐ don't know 3

d) Are these manpower plans related to the current design of existing jobs:

☐ no 1 ☐ yes 2 ☐ don't know 3

13. Does your organization have an annual recruitment scheme for managerial level jobs:

☐ no 1 ☐ yes 2 ☐ don't know 3

If no or don't know, please go to question 14.

a) Are recruitment policies linked to succession plans for individuals:

☐ no 1 ☐ yes 2 ☐ don't know 3

b) Are the recruitment practices investigated for effect on the current designs of existing jobs:

☐ no 1 ☐ yes 2 ☐ don't know 3

c) Is the work behaviour of employees recruited under past recruitment policies taken account of in current practices:

☐ no 1 ☐ yes 2 ☐ don't know 3

15. How are salaries for management level individuals determined, please tick the relevant box(es):

a) Job grading ..... ☐
b) Government advice on rises in salary ..... ☐
c) Discussion between the individual and his salary determining supervisor ..... ☐
d) Depends on the going rates, in industry ..... ☐
e) Different skills get paid differently ..... ☐
f) Managerial level employees union ..... ☐
g) National negotiations ..... ☐

Others, please specify:

_____ ..... ☐
_____ ..... ☐

16. Does your organization chart succession plans:

☐ no (1) ☐ yes (2) ☐ don't know (3)

If no or don't know, please go to question 17.

a) Are individuals told of the plans regarding themselves ..... ☐
b) Is training organised in the pursuit of these plans ..... ☐
c) Are individual views (career aspirations) on Plans for them ascertained ..... ☐

17. If a managerial position becomes vacant will it be filled by internal promotion:

☐ always (1) ☐ often (2) ☐ sometimes (3) ☐ never (4) ☐ don't know (5)

18. When there is need for new skills does the company offer training/ opportunities to current staff:

☐ no (1) ☐ yes (2) ☐ don't know (3)

19. Do you have flexi-time for your managerial level employees:

☐ no (1) ☐ yes (2) ☐ don't know (3)

22. Why did your company initiate Designing Jobs:

a) Employee job dissatisfaction reasons –
   i. after problem arose ..... ☐
   ii. to prevent problem arising ..... ☐

b) Productivity reasons –
   i. to stabilise falling outputs ..... ☐
   ii. to boost productivity ..... ☐

Other reasons, please specify:

c) _____

d) _____

23. Does your organization have a policy according to which managerial jobs are to be designed:

☐ no (1) ☐ yes (2) ☐ don't know (3)

If no or don't know, please go to question 24.

a) Is this policy known to managerial employees:

☐ no (1) ☐ yes (2) ☐ don't know (3)

If no or don't know, please go over to item (c) within this question (i.e. do not answer item (b)).

b) Which of the following groups were involved in forming the job design policy:

i. senior company executive ..... ☐
ii. the Personnel dept..... ☐
iii. outside consultants ..... ☐
iv. the managerial union(s) ..... ☐
v. a committee from different levels of managerial staff ..... ☐

Others, please specify:

vi. _____ ..... ☐
vii. _____ ..... ☐

c) Is the policy stated at corporate level:

☐ no (1) ☐ yes (2) ☐ don't know (3)

If yes,

d) Can major units modify the stated policy to suit their needs:

☐ no (1) ☐ yes (2) ☐ don't know (3)

24. Please indicate the amount of influence on the job design process exercised by each of the following individuals:

		No Influence	Negligible Influence					Considerable Influence
		0	1	2	3	4	5	6	7
i.	The job holder	☐	☐	☐	☐	☐	☐	☐	☐
ii.	The boss of the job holder	☐	☐	☐	☐	☐	☐	☐	☐
iii.	The colleagues of the job holder	☐	☐	☐	☐	☐	☐	☐	☐
iv.	The sub-ordinates of the job holder	☐	☐	☐	☐	☐	☐	☐	☐
v.	Personnel Dept.	☐	☐	☐	☐	☐	☐	☐	☐
	Others, please specify:								
vi.	_____	☐	☐	☐	☐	☐	☐	☐	☐
vii.	_____	☐	☐	☐	☐	☐	☐	☐	☐

b) In your organization is there a special role of "job designer", i.e. a person who facilitates the process of designing managerial jobs:

☐ no 1 ☐ yes 2 ☐ don't know 3

c) Have those responsible for designing the jobs of others had special training in the process of Job Design:

☐ no 1 ☐ yes 2 ☐ don't know 3

b) Personal characteristics, skills or attributes:

☐ no 1 ☐ yes 2 ☐ don't know 3

If yes, please state at least 5 characteristics, skills or attributes for which data is most commonly collected:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

c) Problem areas:

☐ no 1 ☐ yes 2 ☐ don't know 3

If yes,

In the space below could you ennumerate some of the most frequently recurring problem areas:

1. _____
2. _____
3. _____
4. _____

d) Does the job design process include checking that the establishment variables listed below are in line with the needs of the jobs that are designed:

i. Authority available to the job holder ..... ☐
ii. Responsibility given to the job holder ..... ☐
iii. Information flow system, methods and procedures ..... ☐
iv. The structure of the organization ..... ☐
v. Financial Budgeting systems ..... ☐
vi. Administration control procedures ..... ☐

Other variables checked, please specify:

vii. _____ ..... ☐
viii. _____ ..... ☐
ix. _____ ..... ☐

6.2. Table showing classes due to BGA and Statistical Office considered equivalent for the purpose of the study reported in Chapter 6

	BGA classification	Statistical Office classification
1.	Metals and Mining	Mining and quarrying + metal manufacture + metal goods not classified elsewhere
2.	Chemicals, Plastics & Rubber Petroleum (3) Pharmaceuticals (4) Cosmetics & Toiletries (12)	Chemical and allied industries; mineral oil refining; lubricating oils and greases; rubber, linoleum, plastics, floor covering etc.; plastic products not specified elsewhere
3.	Energy: electricity, gas, coal, etc.	Gas, electricity & water; coke
4.	Mechanical engineering (6) Glass, scientific instruments	Mechanical engineering; instrument engineering; glass
5.	Motor vehicles and accessories	Wheeled tractor manufacture; motor vehicle manufacture; motor cycles (tricycles and pedal cycles manufacture); locomotives and railways track equipment; railway carriages and wagons and trains
6.	Aeronautics and shipbuilding	Ship building and marine engineering; aerospace equipment manufacturing and repairing
7.	Electrical engineering and electronics	Electrical engineering
8.	Textile and clothing	Textiles; clothing and footware; leather goods and furs
9.	Food and drink (including tobacco)	Food, drink and tobacco
10.	Timber, paper and packaging (13) printing and publishing, radio & TV	Timber and furniture; paper, printing and publishing
11.	Building and construction	Bricks, fireclay & refractory goods; pottery; cement abrasives & building materials; construction
12.	Travel & Transportation & Tourism (including restaurants)	Transport & communication; cinemas, theatres, radios; sport and other recreation; betting and gambling; hotels & other residential establishments; restaurants, cafes & snack bars; public houses; clubs

continued overleaf

- - - - - - - - - - - - continued from overleaf- - - - - - - - - - - -

13.	Commerce, trade & retailing (17)	Distributive trades
14.	Banking, finance and insurance; advertising & public relations; consulting	Insurance, banking, finance and business; professional and scientific services; accounting services
15.	Printing, publishing and radio	Printing, publishing of newspapers and periodicals; book binding; engraving, etc.
16.	Public services and government	Miscellaneous services; public administration and defence
17.	Teaching and education	Educational services

Note 1: The BGA guide category "Conglomerates, holding companies and venture capital" was not used.

Note 2: Some of the Central Statistical Offices sub-categories (e.g. brushes and brooms, toys, games, children's carriages and sports equipment, etc.) with an employment of around half a million could not be mapped onto the BGA guide classification.

Note 3: In the recruitment for participation, the BGA guide class "Teaching and Education" was excluded.

The table overleaf gives the scheme for proportionate recruitment derived from the Central Statistical Office figures for employment for the 16 categories chosen from the above list.

Category	Proportion
1	1,119
2	577
3	698
4	1,205
5	576
6	394
7	792
8	1,093
9	756
10	521
11	1,527
12	1,543
13	2,640
14	1,198
15	355
16	3,591

6.3. Selection procedure, response rates, associated costs and defacing

Members of the BGA work within the U.K. as well as overseas. It was decided not to contact foreign based individuals as it was the author's wish to study managerial job design practices within the U.K. Additionally, equally compelling reasons involved cost of correspondence and time lag on questionnaire completion. A result of the application of this exclusion criteria was that those foreign (to the U.K.) by nationality or school of graduation could participate in the survey provided they worked in the U.K.; on the other hand, those British by nationality, who might be graduates of U.K. Business Schools, were excluded if they were at the time of the survey working overseas.

Of the first wave of the 158 questionnaire copies sent out, 50 were addressed to Durham graduates. In the second and third waves, 45 and 50 further questionnaire copies were sent out.

The table of Figure A6.1 shows the response rates, completion rates and acceptance rates for the three waves. An explanation for the three terms associated with rates is as follows:

(i) Acceptance - number of copies usable for analysis, i.e. evaluable

(ii) Completion - fulfilment of the acceptances criteria + those completed by respondent but due to defect in completion not evaluable

(iii) Response - fulfilment of the acceptance and completion criteria + those returned uncompleted. (Note: also included in this latter class are cases where letters of apology, without the questionnaire copy, were received).

	No. of responses (response rate)	No. of completions (completion rate)	No. of acceptances (acceptance rate)
Wave 1 - Durham grads.(50)	34 (68.0%)	28 (56%)	27 (54.0%)
- others (108)	61 (56.5%)	35 (32.4%)	32 (29.6%)
Wave 2 (45)	33 (73.3%)	30 (66.7%)	29 (64.4%)
Wave 3 (50)	26 (52.0%)	18 (35.0%)	17 (30.9%)
Total = 253	154 (60.9%)	111 (43.9%)	105 (4.15%)

Figure A6.1: Statistics on questionnaires sent

Explanations for the difference between 'Response' and 'Completion rates are as follows:

1. The person addressed sending a letter, claiming

   (a) he had no time
   (b) he did not understand what was being "driven at".

   Whatever the stated reason, the individual addressed responded, although the questionnaire itself was not completed.

2. The secretary or a colleague of the individual sending a letter (or even a telephone call) with the following types of explanations regarding the individual for whose completion the questionnaire had been sent:

   (a) moved on to some other organisation
   (b) was away for more than 3 weeks - on holiday or tour of duty
   (c) had been posted elsewhere (often overseas) while remaining within the organisation

Stimulating the response rate

From the first wave, the non-Durham response rate of 29.6% was considered abyssmally low and was therefore a cause of anxiety to the author. Brunner and Carol (1969) and Ford (1967) suggest the sending of advance letters in order to stimulate the response rates. The advance letter serves the purpose of 'warming up' the person prior to the receipt of the actual questionnaire.

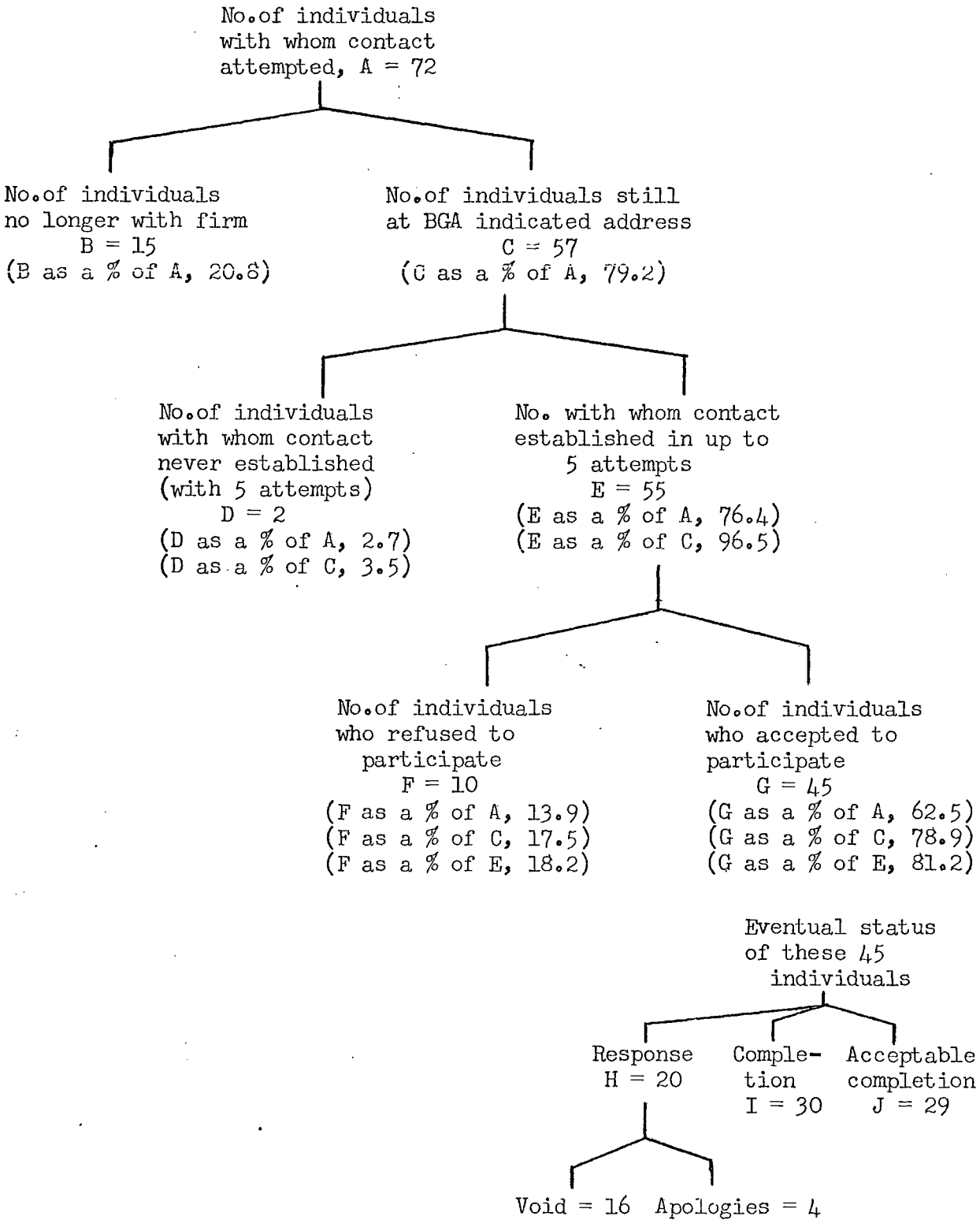


Figure A6.2: Follow-up of effort at prior contact via telephone

For the second wave a strategy based on avoiding 'cold start' was adopted. Further, a "void-rate" (i.e. no response at all) of more than 40% plus the number of responses indicating the physical inability/impossibility of the addressee responding at all, were additional factors recommending some form of "prior contact".

Telephone was used for establishing these prior contacts. Figure A6.2 gives a break down of the author's effort at recruitment through prior contact by telephone.

With reference to the data in Figure A6.2, most individuals contacted remarked on lack of time and some even indicated, by their remarks, that they held academic research to be of 'ivory tower' type, i.e. divorced from reality.

The acceptance to participate was guarded, i.e. on provisional basis. The phrase, "send in the form and I'll respond if I like it and provided I have time" would aptly capture the mood of this guarded acceptance.

At the time of the third wave the author already had in hand 85 evaluable questionnaire copies (excluding the three which arrived late). From cost considerations (discussed later in this section) the prior telephoning was dropped, and 50 questionnaire copies sent out.

Value of telephoning

Telephoning brought to the author's attention the following facts:

(i) that nearly 21% of the questionnaires could not be expected back because of errors in addressing.

(ii) that around 10% may refuse, on account of 'principle', often indicating low regard for academic research

(iii) that nearly 30% may not respond even on a 'warm' basis.

Cost consideration

The computations on costs will be based on two schedules:

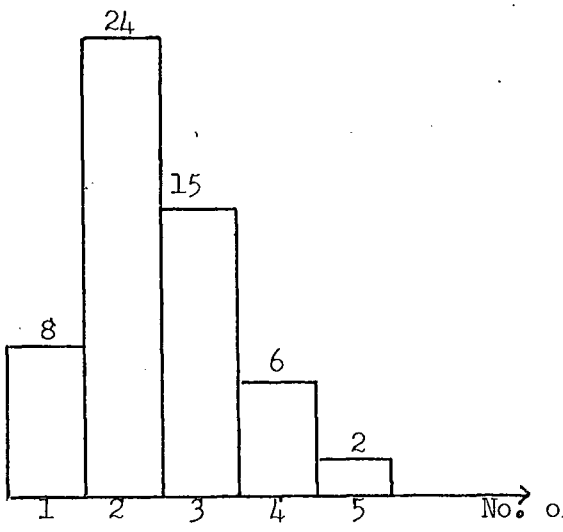
(i) Schedule 1 ('stationery only') unit cost:

Item	Cost
Questionnaire form	0.20
Two A4 envelopes	0.08
Royal Mail postage	0.13
	£0.41

(ii) Schedule 2 ('telephone only') unit cost:

Telephone average cost for 5 minutes = £0.60

The diagram of Figure A6.3 gives the distribution of 'number of telephone calls necessary for contact', for the 55 individuals with whom contact could be made, and the notes on the figure explain the total number of telephone calls. In the calculations incorporating cost of telephone, average telephone conversations of 5 minutes per call will be assumed.



Note 1: Total number of calls for successful contacts = 135 (from the figure)

Note 2: 15 calls established that the individuals no longer worked at the address shown in the BGA handbook

Note 3: 10 calls (5 apiece) to two individuals resulted in 'still no contact'.

Note 4: Total number of calls = 160.

Figure A6.3: Number of telephone calls necessary for contact with individuals

Method 1 - Durham graduates

Total cost, based on Schedule 1, = 50 x 0.41 = £20.50
Produced 27 evaluable completed copies
Therefore cost per usable questionnaire = £0.76

Method 2 - Non-Durham graduates (waves 1 and 3)

Total cost, based on Schedule 1 = 158 x 0.41 = £64.78
Produced 49 evaluable copies
Therefore cost per usable questionnaire = £1.32

Method 3 - Non-Durham graduates (wave 2) with telephone 'warm-up'

Cost on Schedule 1 =45 x 0.41 = £18.45
Cost on Schedule 2 = 160 x 0.60 = £96.00
Therefore total cost = £114.45

Produced 29 evaluable questionnaire copies
Therefore cost per usable questionnaire = £3.95

From the above cost data, the average cost is computed as follows:

Total cost £199.79
Total number of usable questionnaires = 105
Therefore average cost = £1.90

The defacing of questionnaires

It has been stated that no attempt was made to 'mark' the questionnaires sent out. However, questionnaire copies were coded so that on return the author could distinguish which industrial grouping the respondent belonged to. This was the only way that proportionate sampling, which the study plan called for, could be achieved in this current survey. The important thing, considering the author was pledged to complete anonymity, is that the author was really "blind" as to which respondent completed a given questionnaire copy.

Six copies of completed questionnaires, on arrival, were found to be defaced: respondents had obliterated the coding. Therefore only 99 copies could be checked for classification on the industrial grouping to which respondents belonged.

The Spring 1977 issue of Public Opinion Quarterly carries notes from a Symposium of Research Ethics. Although literature on survey (e.g. House, Gerber and McMichael (1977), Kephert and Bressler (1958)), suggests that selective reminders to non-respondents effectively raises the total response rate, no attempt was made to use this method, because the author, agreeing with the discussion at the aforementioned symposium, holds the traceability of respondents' answers as unethical.

The defacers of the questionnaire copies obviously objected to any precoding, although, of course, they did not know the purpose to which the author was putting these codes.

6.4: Integrative classification for functional areas for which job design at managerial level was reported

The 67 respondents between them reported 22 areas (including the 'all' response) to which job design has been applied. These 22 areas were re-classified by the author into 6 classes as shown in the table of Figure 6.3, in the main thesis.

The six classes in the author devised classification are:

1. Production & engineering
2. Sales & marketing
3. Personnel
4. Staff & services (excluding personnel)
5. Accounting & finance
6. All units

The table of Figure A6.4 gives the transformation from respondent classification to author classification.

Respondent reported category (coding on computer)	Reference No. of author classification
Production (1)	1
Marketing (2)	2
Personnel (3)	3
Staff functions (4)	4
Finance (5)	5
Management services (6)	4
Data processing (7)	4
Administration (8)	4
Technical development (9)	1
Accounting (10)	5
Engineering (11)	1
General management (12)	4
Sales force (13)	2
Services (14)	4
Technical (15)	1
Leisure (16)	4
Housing (17)	4
Planning (18)	4
Engineering of capital projects (19)	1
Work services (21)	4
Research & development (20)	1
All (22)	6

Figure A6.4: Transformation of respondent reported functional areas to the author devised scheme

Note: The author accepts that the reclassification is not rigorous.

Appendices to Chapter 7

Contents:

7.1 Specimen letter sent out for the recruitment of organizations.....pp 2.

7.2 List of organizations which participated in study.....pp 1.

7.3 Codes for, numbers of individual participants from, and the status of job design practices within, organizations participating in study.....pp 1.

7.4 Example of the type of letter sent out by Study Co-ordinators requesting individual participation.....pp 4.

7.5 Questionnaire used in the Main Study (Study A).....pp 9.

7.6 Questionnaire used in Supplementary Study (Study B).....pp 8.

Appendix 7.1

Date: _____

Dear

Study on Managerial Job Modification

1. Purpose: The purpose of writing to you is to draw your attention to the study referenced above, currently being pursued at DUBS, with the view of getting your organisation's participation in the study.

2. Introduction: A long line of investigations, the most recent of which is the Finniston Report (1979), have suggested that British industry under-utilises its full manpower potential. It is increasingly becoming evident that the appropriate unit of analysis of organisational efficiency is the individual job holder. Focus on individual effectiveness and potential utilisation demands attention to the design of the job.

3. Study: The particular study I wish to draw to your attention attempts to analyse the effects of modification to managerial jobs from the following angles:
   - utilisation of personal potential
   - contribution to organisational purpose
   - job satisfaction experienced by the job holder

   The study seeks to find out:
   - the effects of job modification on the above items
   - what modifications job holders would choose for improved alignment along the above items.

4. Participation: The study has already started in four organisations of which three are large multi-national ones. The research design calls for the participation of 8 to 10 organisations irrespective of size. Organisations participating in the study allow some of their managerial staff to contribute to the study by completing well designed and pilot-study-tested questionnaires which require around 45 minutes of time.

5. Confidentiality: Anonymity is guaranteed to both the participating organisations and individual managers contributing to the research.

6. Feedback: Organisations participating will be supplied with the following reports:
   - A summary of results obtained in that organisation.
   - A summary of the aggregate results obtained in the study as a whole.
   - A summary of the results obtained in the whole project.

7. Further contact: I hope that reading this letter will have aroused your interest and therefore you will want a host of queries resolved before making decision regarding participation. It is difficult to put on one page everything on the project. I would therefore welcome an opportunity to meet with you and/or your colleagues to resolve outstanding queries and discuss the possibilities of your organisation's participation in the study.

8. Gains for you: Each of the four organisations already in the study hopes to gain something different from the study. A considerable part of the discussion at the meeting will be devoted to delineating the particular potential gains for your organisation. At the end of the day, the study will be judged by the gains accrued to the participating organisations; therefore, as established researchers it is our wish that only organisations with the potential to gain should join the study.

9. Post Study support: In addition to the reports on data to be supplied to participating organisations, those that show further interest and wish to pursue investigation or seek advice to implement changes will be welcome to take advantage of the body of knowledge and high class facilities that only an institution of the standing of Durham University Business School can offer.

10. Credentials: I, the principal researcher on the project, have gained significant managerial experience through working for eight years in the corporate headquarters of a large Swiss multi-national. The project is under the supervision of John L. J. Machin, the Dean of the Faculty of Social Sciences, at Durham.

To arrange the meeting, I shall telephone your office, after allowing for sufficient time for you to have read this letter.

Yours sincerely,

(M. J. Chaudri)

Appendix 7.2

Names of organisations participating in studies

1.	Catering-by-County	U.K.
2.	Corning Class	U.S.A.
3.	Hoechst	Germany
4.	Lloyds Bank Ltd.	U.K.
5.	Scottish & Newcastle Group	U.K.
6.	Shell U.K. Oil	U.K.
7.	Timex Corporation	U.S.A.
8.	Trust House Forte	U.K.
9.	Vaux Breweries	U.K.

Organisation (Code)	Number of participants		Status of job design (For numbers in brackets see note below)		
	Study A	Study B	None	Unit	Policy
ALPHA	13	15	X(13,15)		
BETA	7	7			
DELTA	12	7	X(12,7)		
GAMMA	23	18		X(23,18)	
MU	24	19			X(24, 19)
OMEGA	14	17	X(14,17)		
PHI	14	10		X(14,10)	
THETA	3	4			X (3, 4)
UPSILON	8	18		X(8,18)	
Totals	117	116	(39,39)	(45,46)	(34,30)

Note: The figures inside the brackets indicate the number of respondents, from the particular organisation, who took part in the studies. For example, the entry for organisation ALPHA shows that:

1. There was no job design activity in that organisation.
2. The number of respondents taking part in studies A and B were 12 and 11 respectively.

The totals row, then, indicates that altogether, from the subset of organisations with no job design activity, 38 participants had had their jobs modified (Study A), and 40 held jobs which had not been modified (and therefore took part in Study B).

The following two pages comprise Appendix 7.4

Scottish & Newcastle Beer (North) Limited

Tyne Brewery
Gallowgate
Newcastle upon Tyne
NE99 1RA

Telephone 0632 25091
Telex 53313

Date
r Ref
r Ref P/RAW/lw

Dear

MANAGERIAL JOB DESIGN

We are co-operating with Durham University Business School in a project in the area of Managerial Job Design. Our organization is one of the select set of organizations taking part in this project.

The aims of the current study is to find out:
1. Whether managerial position holders - whose jobs have not been appreciably modified over the last two years - beleive that the design of their jobs could be improved.
2. Whether managerial position holders - whose jobs have been modified over the the last two years - believe that modifications lead to improved job design.

In the Durham paradigm, if for a job two or more different designs are possible, the design which produces more of the following:
1. Greater contribution to organizational purpose.
2. Greater utilization of individual potential.
3. Increased Job Satisfaction.
concomitantly and in a balanced way, is considered better.

The researcher from Durham Business School has developed a set of two questionnaires thereby covering the two aims of the project, stated above, through a different questionnaire.

Both from the research design and organizational viewpoints, not all personnel from within our organization can take part in the study. We have, therefore, rather arbitrarly selected from among our staff certain members who might be able to contribute towards this study. Your participation is requested through the completion of the attached questionnaire.

To ensure complete confidentiality to your responses the study is organized for you to return the completed questionnaire direct to the researcher in Durham. If for some reason you do not wish to take part in this study, please return the blank questionnaire direct to me.

...../2

However, if you accept to take part in the study the researcher and I would be most grateful if you would fill-in the questionnaire at your earliest convenience. Quick return to the researcher will, no doubt, help him but will also benefit our organization - the reason for our co-operation.

Many thanks.

Yours sincerely

NB It would be appreciated if you could endeavour to complete and reurn the questionnaire within one week.

Appendix 7.5

(The Questionnaire used in the Main Study (Study A)).

project:

Effective Job Design

for

Managerial Positions

questionnaire:

Exploration of

Modifications made to Managerial Jobs

On completion, please return
the questionnaire to:

M. J. Chaudri,
Durham University Business School,
Mill Hill Lane,
Durham, DH1 3LB

If you have any queries,
please telephone

Jim Chaudri on (0385) 41919 Ext. 59

document MJC/79/3

Dear Research Participant,

Many thanks for agreeing to take part in this study on modification to Managerial Jobs.

Purpose: The purpose of this research is to study the process of modification to managerial jobs. The underlying assumption is that 'a job has a design to it'. The process of modification takes it from one design to another. This questionnaire has been developed to investigate the changes produced by modification to managerial jobs to find out:

i) details of the processes involved in modification.
ii) the rationale used for modification.
iii) the effect of modification on performance.
iv) the effect of modification on satisfaction.

Definitions: Individual Potential Utilization: % consumption of individual potential.

A person has a certain potential at which he can perform. Of this potential for work he wishes to contribute a certain amount towards the achievement of organizational purposes or objectives. It is this latter potential that is important for this research. In questions where job performance is measured it is with respect to this ambient value that references are made. When asked about the effect of modifications on Job performance indicate where the changes tended to increase or decrease the use of the potential that you are willing to contribute to organizational purposes.

Job Satisfaction: sense of well-being derived from work process and/or results achieved.

Format: The questionnaire is in 4 sections:

1. Respondent information
2. The process of modification
3. The basis of modification
4. The results of modification: in terms of
   a) Perceived Effects on contribution to organizational purposes
   b) Effects on utilization of Potential
   c) Effects on Job Satisfaction

Note: Although the questionnaire has been pilot studied where it was tested inter alia for timing and clarity, there may still be some instances where a first glance does not bring out the meaning. In such a case it is recommended that you read all the options etc., before answering individual bits. However, as the quality of response is the key to the research, if you are at all uncertain about a question please telephone the researcher at Durham (0385) 41919 Ext. 59.

Yours sincerely,

(M. J. Chaudri).

6. How long have you occupied your current position:

i. Less than 1 year ☐
ii. Between 1 year and 2 years ☐
iii. Between 2 years and 5 years ☐
iv. Between 5 years and 8 years ☐
v. More than 8 years ☐

7. Please indicate the state of the position you are currently occupying <u>at the time of your appointment</u>:

i. Newly created, due to expansion ☐
ii. Newly created, due to re-structuring ☐
iii. Newly created, but don't know why ☐
iv. Vacant, due to promotion of the previous occupier ☐
v. Vacant, due to previous occupier leaving the firm ☐
vi. Vacant, due to previous occupier moving to another position but which was not a promotion ☐
vii. Vacant, but don't know the reason why ☐
viii. Others, please specify_____ ☐

8. Did you have a hand-over period (i.e. a period of time when the outgoing job holder introduced the job to you):

☐ no (1) ☐ yes (2)

If yes,
please indicate the duration of hand-over period by ticking the appropriate option below:

i. One day ☐
ii. One week ☐
iii. Two weeks ☐
iv. One month ☐
v. Others, please specify_____ ☐

9. Please indicate how you were recruited to your present post:

i. External advertisement ☐
ii. Internal advertisement ☐
iii. External head-hunted ☐
iv. Internal invitation ☐
v. Elected by peer group ☐
vi. Others, please specify:_____ ☐

If you were recruited from outside your present firm, please go to question 11.

SECTION 2

THE PROCESS INVOLVED IN THE MODIFICATION OF YOUR JOB

Please answer this and subsequent sections in respect of either the most important or the only job modification you have experienced in the last 2 years.

16. Please tick each statement which you would accept as depicting one of the reasons for the modification to your job.

If statements listed are not fully descriptive of all the reasons for modifications to your job, please add the additional reasons:

i. To increase job satisfaction ..... ☐

ii. To improve the organizational relevance of my output ..... ☐

iii. The arrival of a new work colleague ..... ☐

iv. The arrival of a new boss ..... ☐

v. The arrival of a new sub-ordinate ..... ☐

vi. Following changes in a department other than my own ..... ☐

vii. Following the departure of a colleague who was not to be replaced ..... ☐

viii. Following the departure of a sub-ordinate who was not to be replaced ..... ☐

ix. To make formal, work activity which was informal before ..... ☐

x. To improve the match between my managerial style and the job ..... ☐

xi. To utilize more of my own talents and abilities . ☐

xii. As an intentional reaction (response) to changes in the Business environment ..... ☐

xiii. To produce and equitable job load among staff members ..... ☐

xiv. To reduce overlapping of duties ..... ☐

xv. To improve work coverage ..... ☐

xvi. To produce equitable remuneration ..... ☐

xvii. To reflect changes in the outputs demanded of me by others ..... ☐

xviii. To reflect changes in the inputs I need from others ..... ☐

Others, please specify:

xix. _____ ..... ☐

xx. _____ ..... ☐

xxi. _____ ..... ☐

18. The last question (number 17) had to do with how modification actually happened. In this question you are asked to indicate how you would have liked them to have happened.

i. Would it have been advantageous for you, for initiation to modification to have been done by somebody other than the person who actually did it.

☐ no 1 ☐ yes 2 ☐ don't know 3

ii. Would it have been advantageous for you if other persons had participated in the modification to your job:

☐ no 1 ☐ yes 2 ☐ don't know 3

iii. Would it have been advantageous to you if the relative influence exercised by the different participants had been different:

☐ no 1 ☐ yes 2 ☐ don't know 3

If no or don't know to all the above three items, please go to question 19.

In col(a) - ensure that the column contains the designation of all people who you believe should have taken part in the modification.

In col(b) - indicate with a tick the person you think should have initiated the modification.

In col(c) - show the amount of influence you think each participant should have exercised.

(a) Persons involved	(b) initiator	(c) Participants influence on determining modification details
		1 2 3 4 5 Least Most
i. _____		☐ ☐ ☐ ☐ ☐
ii. _____		☐ ☐ ☐ ☐ ☐
iii. _____		☐ ☐ ☐ ☐ ☐
iv. _____		☐ ☐ ☐ ☐ ☐
v. _____		☐ ☐ ☐ ☐ ☐

SECTION 3

THE RATIONALE USED DURING JOB MODIFICATION

20. i. Had similar jobs in your organization been successfully modified along the lines used in the modification of your job.

☐ no 1 ☐ yes 2 ☐ don't know 3

ii. Was your job the first of a number of similar jobs that would be modified in the light of experience gained in the modification of your job.

☐ no 1 ☐ yes 2 ☐ don't know 3

iii. Was the job being modified in persuance of a change in the Job Design policy in your organization.

☐ no 1 ☐ yes 2 ☐ don't know 3

21a. Does your organization require a re-appraisal of the Goals (Aims or Objectives) of a job during the modification process:

☐ no 1 ☐ yes 2 ☐ don't know 3

If no or don't know please go to question 22.

b. Please indicate which of the following aspects related to the Goals (Aims or Objectives) of your job were re-appraised during the modification to your job:

i. The relevance of the goals - to you ..... ☐
ii. to your dept. ..... ☐
iii. to company ..... ☐
iv. The clarity of the goals ..... ☐
v. The relative importance of the goals ..... ☐
vi. Your ability to achieve the goals ..... ☐
vii. The training required to enable you to achieve the goals ..... ☐
viii. The adequacy of the resources made available to you ..... ☐

Other parameters, please specify:

ix. _____ ..... ☐
x. _____ ..... ☐

22. JOB ELEMENTS

Please indicate the modification and the effects of these modifications, by placing a cross on the relevant scale point.

Job Element (involved in modification)	Effect of modification	Perceived Effect on Contribution to organizational purpose	Effect on Utilization of your potential	Effect on Job Satisfaction
	Decreased Increased	Decreased Increased	Decreased Increased	Decreased Increased
	-3 -2 -1 0 1 2 3	-3 -2 -1 0 1 2 3	-3 -2 -1 0 1 2 3	-3 -2 -1 0 1 2 3
i. Outputs quality				
ii. Outputs quantity				
iii. Inputs quality				
iv. Inputs quantity				
v. Number of sub-ordinates				
vi. Resources available				
vii. Representing the views of others				
viii. Generating and developing new ways of doing things				
ix. Opportunity to use judgement				
x. Confidential elements in the job				
xi. Interaction with other departments inside organization				
xii. Interaction with individuals/ groups outside organization				
xiii. Amount of non-routine work in job				
xiv.				
xv.				

24. JOB ATTRIBUTES

Please indicate the modification and the effects of these modifications, by placing a cross on the relevant scale point.

Effect of modification	Direction of modification	Perceived Effect on Contribution to organizational purpose	Effect on Utilization of your potential	Effect on Job Satisfaction
	Decreased Increased	Decreased Increased	Decreased Increased	Decreased Increased
	-3 -2 -1 0 1 2 3	-3 -2 -1 0 1 2 3	-3 -2 -1 0 1 2 3	-3 -2 -1 0 1 2 3
i. Financial rewards				
ii. Status of the job				
iii. Technical knowledge required to do job				
iv. Authority				
v. Responsibility				
vi. Number of people who supply you with inputs for your job				
vii. Number of people who need things from you while doing your job				
viii. Influence you exercise on the the work of: your boss				
ix. your sub-ordinates				
x. your colleagues				
xi. Choice of working colleagues				
xii. Influence on appointments of colleagues				
xiii. Amount of travelling required by your job				
xiv. Amount of uncertainty in your job				
xv.				
xvi.				

26. INTERPERSONAL ASPECTS OF THE JOB

Please indicate the modification and the effects of these modifications, by placing a cross on the relevant scale point.

	Effect of modification	Perceived Effect on Contribution to organizational purpose	Effect on Utilization of your potential	Effect on Job Satisfaction
	Decreased Increased	Decreased Increased	Decreased Increased	Decreased Increased
	-3 -2 -1 0 1 2 3	-3 -2 -1 0 1 2 3	-3 -2 -1 0 1 2 3	-3 -2 -1 0 1 2 3
i. Interpersonal relationships				
ii. Agreement with those due to receive outputs of exactly what is required				
iii. Agreement with those due to supply inputs of exactly what they will supply				
iv.				
v.				
vi.				
vii.				
viii.				
ix.				
x.				
xi.				
xii.				
xiii.				
xiv.				
xv.				
xvi.				

Appendix 7.6

(The Questionnaire used in the Supplementary Study (Study B)).

project:

Effective Job Design

for

Managerial Positions

questionnaire:

Critical Parameters in Managerial Jobs

On completion, please return
the questionnaire to:

M. J. Chaudri,
Durham University Business School
Mill Hill Lane,
Durham. DH1 3LB

If you have any queries,
please telephone

Jim Chaudri on (0385) 41919 Ext.

document MJC/79/2

Dear Research Participant,

Many thanks for agreeing to take part in this study on Critical Parameters in Managerial Jobs.

Purpose: The purpose of this study is to find out:

1. What changes constitute job modification.
2. How jobs could be modified to produce:

   a) greater satisfaction for the individual job holder.
   b) greater contribution towards organizational purpose.

The thread linking the above points, a and b, is the utilization and development of the individual's potential to perform.

This questionnaire is directed at persons whose jobs have not undergone fundamental change over the last 2 years, and seeks to ascertain whether such job holders believe modifications to the position they are currently occupying could lead to outcomes mentioned under a and b above.

Definitions: For the purpose of this research the following definition has been adopted:

1. Job Design: "the organization of the contents of a job to satisfy technical-organizational requirements of the work to be accomplished and the human requirements of the person performing the work."

2. Individual Potential Utilization: % consumption of individual potential.

   A person has a certain potential at which he can perform. Of this potential for work he wishes to contribute a certain amount towards the achievement of organizational purpose or objectives. It is this latter potential that is important for this research. In questions where job performance is measured it is with respect to this ambient value that references are made. When asked about the effect of modifications on Job performance indicate where the changes would tend to increase or decrease the use of the potential that you are willing to contribute to organizational purposes.

3. Job Satisfaction: sense of well-being derived from work process and/or results achieved.

Format: The questionnaire is in 2 sections:

Section A: Respondent information
Section B: Latent design modifications to produce greater job satisfaction and/or greater utilization and development of individual potential.

Note: Although the questionnaire has been pilot studied where it was tested inter alia for timing and clarity, there may still be some instances where a first glance does not bring out the meaning. In such a case it is recommended that you read all the options etc., before answering individual bits. However, as the quality of response is the key to the research, if you are at all uncertain about a question please telephone the researcher at Durham (0385) 41919 Ext. 59.

Yours sincerely,

MJChaudri

(M. J. Chaudri).

6. Please indicate the state of the position you are currently occupying at the time of your appointment:

i. Newly created, due to expansion ..... ☐
ii. Newly created, due to re-structuring ..... ☐
iii. Newly created, but don't know why ..... ☐
iv. Vacant, due to promotion of the previous occupier ..... ☐
v. Vacant, due to previous occupier leaving the firm ..... ☐
vi. Vacant, due to previous occupier moving to another position but which was not a promotion .. ☐
vii. Vacant, but don't know the reason why ..... ☐
viii. Others, please specify: _____ ☐

7. Did you have a handover period (i.e. a period of time when the outgoing job holder introduced the job to you):

☐ no (1) ☐ yes (2)

If yes,
please indicate the duration of handover period by ticking the appropriate option below:

i. one day ..... ☐
ii. one week ..... ☐
iii. two weeks ..... ☐
iv. one month ..... ☐
v. others, please specify: _____ ☐

8. Please indicate how you were recruited to your present post:

i. External advertisement ..... ☐
ii. Internal advertisement ..... ☐
iii. External head-hunted ..... ☐
iv. Internal invitation ..... ☐
v. Elected by peer group ..... ☐
vi. Others, please specify: _____ ☐

If you were recruited from outside your present firm, please go to question 10.

9. Which of the following statements most accurately expresses the nature of the move from your previous to your present job:

i. A promotion ..... ☐
ii. A move to obtain wider experience ..... ☐
iii. Others, please specify: _____ ☐

SECTION B

Latent modifications to your job which would result in enhanced utilization of your potential for performance and/or product greater job satisfaction.

This section contains 6 questions each of which is in an identical, simple to answer format.

The subject matter of these questions is:

question 15: Job Elements

question 16: Job Process

question 17: Job Attributes

question 18: Personal Attitude

question 19: Interpersonal Aspects of job

question 20: Job Description, Design and Appraisal

In each question regarding col(a) as a potential modification, indicate

in col(b) - whether you believe changes could be made on the item concerned by giving the direction and degree of the modification thought desirable by you.

in col(c) - the perceived effect of modification suggested by you on your contribution to organizational purpose.

in col(d) - the perceived effect of modification suggested by you, on the utilization of your potential for work.

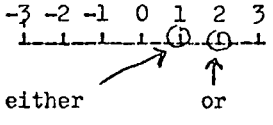
in col(e) - the perceived effect of modification suggested by you, on your job satisfaction.

Note 1: On items that you believe changes should not be made, do not fill in cols(c) to col(e)

Note 2: At the end an extra page has been added for you to make suggestions on latent modifications not covered in the questionnaire but which you, as a job holder, feel could be beneficially made.

For questions 15 to 21
either: place a circle around the scale point
or : put a cross on the scale point.

Example:



Note: Although the positive and negative ends of the scales are marked "increased" and "decreased respectively, some variables may require interpretation other than these For example, for some variables the alternative headings for the said scales could be "improved" and "deteriorated", "tightened" and "relaxed", "raised" and "lowered", etc. Please interpret the scale labels appropriately.

16. JOB PROCESS

Please indicate the modification and the effects of these modifications, by placing a cross on the relevant scale point.

Latent change	Suggested modification	Perceived Effect of suggested modification on contribution to organizational purpose	Perceived Effect of suggested modification on the utilization of your potential	Perceived Effect of suggested modification on Job Satisfaction
	Decreased Increased -3 -2 -1 0 1 2 3	Decreased Increased -3 -2 -1 0 1 2 3	Decreased Increased -3 -2 -1 0 1 2 3	Decreased Increased -3 -2 -1 0 1 2 3
i. Choice in what you do				
ii. Choice in how you do your job				
iii. Choice in the order in which you do parts of your job				
iv. Feedback on performance				
v. Rules, regulations and guidelines received by you				
vi. Advice and recommendation from others				
vii. Your influence in the work of your unit				
viii. Priority mix on different aspects of your work				
ix. Adherence to timeliness of inputs received by you				
x. Agreement with those who receive your outputs of exactly what is required				
xi. Agreement with those who supply inputs to your job of exactly what they will supply				
xii. The amount of information received by you				

18. PERSONAL ATTITUDES

Please indicate the modification and the effects of these modifications, by placing a cross on the relevant scale point.

Latent change	Suggested modification	Perceived Effect of suggested modification on contribution to organizational purpose	Perceived Effect of suggested modification on the utilization of your potential	Perceived Effect of suggested modification on Job Satisfaction
	Decreased Increased -3 -2 -1 0 1 2 3	Decreased Increased -3 -2 -1 0 1 2 3	Decreased Increased -3 -2 -1 0 1 2 3	Decreased Increased -3 -2 -1 0 1 2 3
i. The grade of your job				
ii. The opportunity for promotion/advancement				
iii. The opportunity to learn				
iv. The opportunity to receive recognition				
v. The opportunity to help others				
vi. The opportunity to use skills and abilities				
vii. Your interest in elements of your job				
viii. Your level of confidence in doing your job				
ix. Sense of job ownership				
x. Stress experienced in doing your job				
xi. Fairness of the demands made on you				

20. JOB DESCRIPTION, DESIGN AND APPRAISAL

Please indicate the modification and the effects of these modifications, by placing a cross on the relevant scale point.

Latent change	Suggested modification	Perceived Effect of suggested modification on contribution to organizational purpose	Perceived Effect of suggested modification on the utilization of your potential	Perceived Effect of suggested modification on Job Satisfaction
	Decreased Increased -3 -2 -1 0 1 2 3	Decreased Increased -3 -2 -1 0 1 2 3	Decreased Increased -3 -2 -1 0 1 2 3	Decreased Increased -3 -2 -1 0 1 2 3
i. The level of detail in job description				
ii. The adherence to job descriptions				
iii. The degree of overlap between your job and those of your colleagues				
iv. The frequency of the review of job design				
v. The effort spent in designing jobs				
vi. The effort expended in appraising performance				

Appendices to Chapter 9

Contents:

9.1 Index to M.J.C. Research Material filed in DUBS Library..... pp 1.

9.2 Item 1: Example of letter to participants, sent with the documentation in preperation for the dyadic discussions..... pp 1.

Item 2: Example of the form prepared for the participants to tick Expectations for further discussions..... pp 1.

Item 3: Example of form prepared for establishing correspondence between Expectations..... pp 4.

9.3 Letter send by researched organization, indicating diagnosis made, by researched group..... pp 2.

APPENDIX 9.1

Index of M.J.C. Research Material filed in DUBS Library

Observation research calls for such detailed documentation that its bulk precludes its inclusion even in the Appendices of this thesis. All material is either typed or in the form of computer print-out.

Researchers wishing to delve further into the author's research material have access to the following in the M.J.C. Research Material in DUBS Library.

M.J.C. Research Material Ref. No.	Title and Synopsis of Content	
M.J.C. R.M.9.1	Background summary to research environment	pp.1-9
M.J.C. R.M.9.2	Presentation document for discussion with RMG	pp.1-5
M.J.C. R.M.9.3	Notes of project meeting 30.5.1978	pp.1-4
M.J.C. R.M.9.4	Sample set of an annotated job audit report RGB-A_R. Initial data and annotations	pp.1-2
M.J.C. R.M.9.5	Full set of reports Computer printout	pp.50+
M.J.C. R.M.9.6	Notes of observational study of: JEL Day 1	pp.1-10
M.J.C. R.M.9.7	" " " " " " Day 2	pp.1-6
M.J.C. R.M.9.8	" " " " " : EMO Day 1	pp.1-9
M.J.C. R.M.9.9	" " " " " " Day 2	pp.1-6
M.J.C. R.M.9.10	" " " " " RAP Day 1	pp.1-9
M.J.C. R.M.9.11	" " " " " " Day 2	pp.1-8
M.J.C. R.M.9.12	" " " " " RGB Day 1	pp.1-8
M.J.C. R.M.9.13	" " " " " " Day 2	pp.1-9

C LETTER2

JOINT CO-OPERATION IN JOB DESIGN
NAME OF COMPANY
AND
DURHAM UNIVERSITY BUSINESS SCHOOL

Appendix 9.2

Item 1

DEAR TONY,

THIS IS THE DOCUMENTATION IN PREPARATION OF THE DYADIC DISCUSSIONS. INSIDE YOU WILL FIND 5 CLIPPED-TOGETHER BRIEFS. EACH BRIEF, IN TURN, HAS 5 PARTS.

EACH BRIEF CONTAINS PAPERS PERTAINING TO ONE PERSON WITH WHOM YOU WILL HAVE A DYADIC DISCUSSION. EACH BRIEF CONTAINS THE FOLLOWING DOCUMENTS, IN THE ORDER STATED:

1. YOUR AND YOUR DYADIC OPPOSITE'S EXPECTATIONS.
2. A FORM WHICH ASKS YOU TO ANALYSE THE < P E R C E I V E D > EXPECTATIONS OF YOUR DYADIC OPPOSITE.
3. A FORM WHICH ASKS YOU TO ANALYSE THE < A C T U A L > EXPECTATIONS OF YOUR DYADIC OPPOSITE.
4. A FORM WHICH ASKS YOU TO RELATE < YOUR A C T U A L > EXPECTATIONS TO THE PERCEIVED EXPECTATIONS OF YOUR DYADIC OPPOSITE.
5. A FORM WHICH ASKS YOU TO RELATE <YOUR P E R C E I V E D > EXPECTATIONS TO THE ACTUAL EXPECTATIONS OF YOUR DYADIC OPPOSITE.

YOURS ,

JIM

JOINT CO-OPERATION IN JOB DESIGN
NAME OF COMPANY
AND
DURHAM UNIVERSITY BUSINESS SCHOOL

Appendix 9.2

Item 2

NAME OF PARTICIPANT : EAT/A_R

PLEASE TICK-OFF THE NUMBERS OF THE < P E R C E I V E D > EXPECTATIONS, STATED BY YOUR OPPOSITE IN THE DYAD, WHICH ARE:

1. NOT CLEAR/ VAGUE.
2. YOU ARE UNABLE TO MEET BECAUSE (A) YOU DO'NT HAVE THE SKILLS /RESOURCES /AUTHORITY .
   (B) YOU DO'NT HAVE THE TIME.
   (C) ETC. PLEASE STATE REASON.
3. YOU ARE UNWILLING TO MEET BECAUSE (A) IT SHOULD BE MET/ENSURED BY SOMEBODY ELSE.
   (B) IT IS ORGANIZATIONALLY UNSOUND.
   (C) ETC. PLEASE STATE REASON.

* 15001 *	* 15002 *	* 15003 *	* 15004 *	* 15005 *	* 15006 *	* 15007 *
* 15008 *	* 15009 *	* 15010 *	* 15011 *	* 15012 *	* 15013 *	* 15014 *
* 15015 *	* 15016 *	* 15017 *	* 15022 *			

JOINT CO-OPERATION IN JOB DESIGN
NAME OF COMPANY
AND
DURHAM UNIVERSITY BUSINESS SCHOOL

Appendix 9.2

Item 3 / Page 1

NAME OF PARTICIPANT : EAT/RAP

GO DOWN THE LIST OF YOUR < P E R C E I V E D > EXPECTATIONS (SHOWN AS YOU. AE. OTHER) AND SEE IF YOU CAN FIND EXPECTATIO STATED BY YOUR OPPOSITE NUMBER IN THE DYAD (SHOWN AS OTHER .PE. YOU) WHICH CORRESPOND TO, OR MATCH, YOUR OWN. NOTE THERE MIGHT BE MORE THE ONE OF HIS EXPECTATIONS THAT MATCH ONE OF YOUR AND VICE-VERSA ? PLEASE NOTE THE NUMBER(S) OF HIS EXPECTATION(S) AGAINST THE NUMBER OF YOUR EXPECTATION TO WHICH IT(THEY) CORRESPONDS..

45001	->	20034				45002	->				
45003	->					45004	->	20040			
45005	->	20029	20025			45006	->	20015	20013	20031	
45007	->	20001	20013	20015		45008	->	20030	20-40		
45009	->					45010	->				
45011	->					45012	->	20019	20022	20012	20011
45013	->	20008	20003			45014	->	20017			
45015	->	20017				45016	->	20019	20024	20021	20011
45017	->					45018	->	20012			
45019	->	20012				45020	->	20025			

JOINT CO-OPERATION IN JOB DESIGN
NAME OF COMPANY
AND
DURHAM UNIVERSITY BUSINESS SCHOOL

NAME OF PARTICIPANT : EAT/KAP

GO DOWN THE LIST OF YOUR < P E R C E I V E D > EXPECTATIONS (SHOWN AS YOU. AE. OTHER) AND SEE IF YOU CAN FIND EXPECTATIO STATED BY YOUR OPPOSITE NUMBER IN THE DYAD (SHOWN AS OTHER .PE. YOU) WHICH CORRESPOND TO, OR MATCH, YOUR OWN. NOTE THERE MIGHT BE MORE THE ONE OF HIS EXPECTATIONS THAT MATCH ONE OF YOUR AND VICE-VERSA ? PLEASE NOTE THE NUMBER(S) OF HIS EXPECTATION(S) AGAINST THE NUMBER OF YOUR EXPECTATION TO WHICH IT(THEY) CORRESPONDS..

45021 ->	20039			
45023 ->	20033			
45025 ->	20014	20016		
45027 ->	20035			
45029 ->	20032	20015		
45031 ->	20006	20003		
45033 ->				
45035 ->	20009			
45037 ->	20040			
45039 ->				

23

45022 ->	20057	20030		
45024 ->	20030			
45026 ->	20019			
45028 ->	20010	20011		
45030 ->	20012			
45032 ->				
45034 ->	20009			
45036 ->	20003			
45038 ->	20090			
45040 ->				

JOINT CO-OPERATION IN JOB DESIGN
NAME OF COMPANY
AND
DURHAM UNIVERSITY BUSINESS SCHOOL

Appendix 9.2
Item 3 / page 3

NAME OF PARTICIPANT : EAT/KAP

GO DOWN THE LIST OF YOUR < P E R C E I V E D > EXPECTATIONS (SHOWN AS YOU. AE. OTHER) AND SEE IF YOU CAN FIND EXPECTATIO STATED BY YOUR OPPOSITE NUMBER IN THE DYAD (SHOWN AS OTHER .PE. YOU) WHICH CORRESPOND TO, OR MATCH, YOUR OWN. NOTE THERE MIGHT BE MORE THE ONE OF HIS EXPECTATIONS THAT MATCH ONE OF YOUR AND VICE-VERSA ? PLEASE NOTE THE NUMBER(S) OF HIS EXPECTATION(S) AGAINST THE NUMBER OF YOUR EXPECTATION TO WHICH IT(THEY) CORRESPONDS..

45041	->					45042	->	Knock		
45043	->	20013	20016			45044	->	20033		
45045	->	20033				45046	->	20033		
45047	->	20033				45048	->			
45049	->					45050	->			
45051	->					45052	->	20047		
45053	->					45054	->			
45055	->					45056	->			
45057	->					45058	->			
45059	->					45060	->	20026		

JOINT CO-OPERATION IN JOB DESIGN
NAME OF COMPANY
AND
DURHAM UNIVERSITY BUSINESS SCHOOL

Appendix 9.2
Item 3 Page 4

NAME OF PARTICIPANT : EAT/RAP

GO DOWN THE LIST OF YOUR < P E R C E I V E D > EXPECTATIONS (SHOWN AS YOU. AE. OTHER) AND SEE IF YOU CAN FIND EXPECTATIO STATED BY YOUR OPPOSITE NUMBER IN THE DYAD (SHOWN AS OTHER .PE. YOU) WHICH CORRESPOND TO, OR MATCH, YOUR OWN. NOTE THERE MIGHT BE MORE THE ONE OF HIS EXPECTATIONS THAT MATCH ONE OF YOUR AND VICE-VERSA ? PLEASE NOTE THE NUMBER(S) OF HIS EXPECTATION(S) AGAINST THE NUMBER OF YOUR EXPECTATION TO WHICH IT(THEY) CORRESPONDS..

* 45061 *	->	*	*	*	*	*	* 45062 *	->	*	*	*	*	*
* 45063 *	->	*	*	*	*	*							

APPENDIX 9.3

TO: J. Machin
J. Chaudri

COPIES TO: A_R
EAT
AJH

OLEFINE WORKS, P-XYLENE PLANT;
AN EXPECTATIONS APPROACH

We have reviewed the work with the managers involved and thought you might like to mull over some of our ideas before we meet. If nothing else, it is clear that the one to one conversations have in themselves cleared the air, pointed up problems and produced some solutions. These specific, individual items I have not listed here, although perhaps we need to make sure they are not forgotten. The following list contains those items which the group as a whole identify and presumably want to tackle, in some way.

1. Senior management contact, presence

There is a clear need for the senior managers to be seen to make more contact with staff at all levels. This is recognised as being a bigger problem than p-xylene and hence difficult for the senior managers to solve because of the wide area covered and numbers involved, on shift.

2. Senior Plant Manager role

The role of the senior plant manager is not understood or operational. What distinguishes him from the rest? An acceptance and understanding of his job is needed by the teams. RAP is moving off the plant and EMO will be taking over. In some ways, this presents an ideal opportunity for EMO's new role to be agreed and practised.

3. Clearer definition of areas of responsibility, allocation of tasks

There are areas of overlap between hot end/cold end/development manager which could be reduced. There is a need to resolve the degree of involvement of the development manager in day to day running. How are tasks shared out to match workload, skills, inclinations? Could some tasks be integrated to produce more efficient satisfying jobs?

4. Resolution of section and group managers' expectations of the plant managers

The plant managers are concerned whether they meet the group manager's expectations of not only what they achieve but the way that they achieve it and see an area of possible conflict with the Section Manager's expectations. A related question is how are senior managers kept aware of all, or enough, of what the plant managers are doing - career aspirations and recognition probably form the basis for these concerns.

5. Communication

Both informal and formal information systems could be improved. The plant managers have resolved to put aside at least one hour each week to update each other on topics from their own patch. There is a need for basic plant data to be processed into information to meet the managers' needs. Senior managers would like to see some reasonable conformity in the way information is presented, from several different plants.

6. Superintendent's role

This is partially covered under (3) but some special questions arise. Who is his boss; is the balance of technical/people activities correct; is the balance of interesting/mundane work fair? What is the cut between seniorplant manager and superintendent on personnel.

7. Contacts with the outside world

This is an area which has been touched on in the dyads, although as we were all not comprehensive in our expectations outside the group the data is limited. Who is responsible for liaison with which departments? What are they supposed to do?

Two areas fall outside the p-xylene plant completely.

8. What is the relationship between the line and the training section, A_R, EAT and RAP, for the Junior Plant Operators.

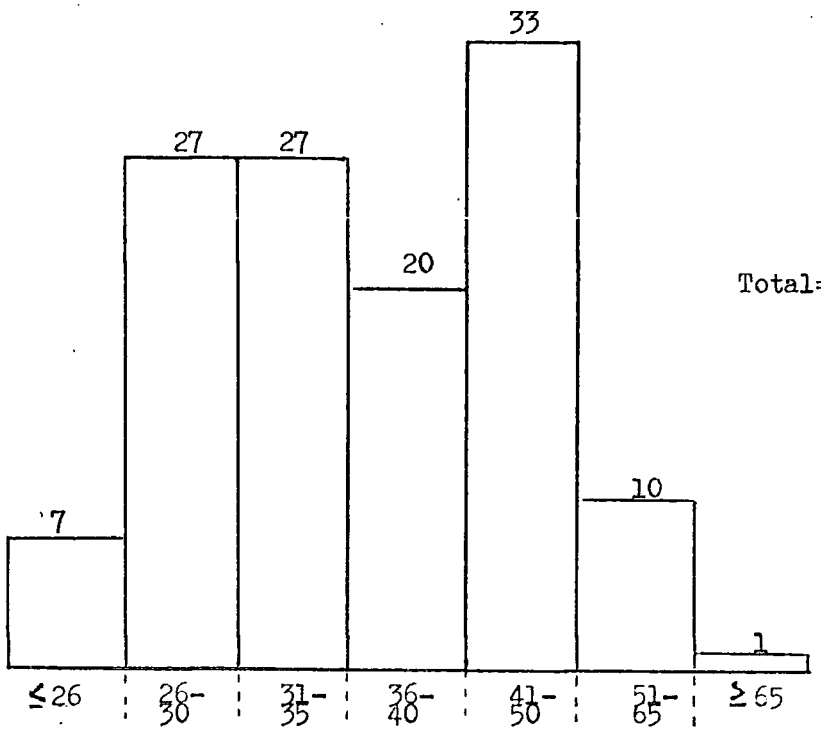
9. Can we use the expectations to help in further identification of management training needs.

Finally, I am sure that the researcher has seen things that we are missing, or even avoiding, and several of the group s aid that they would be interested in hearing him display his views.

Signed: EAT

Appendix to Chapter 10

Contents: Distributions of the Demographic variables
for the study-participants.....pp 3.



Total=125 respondents

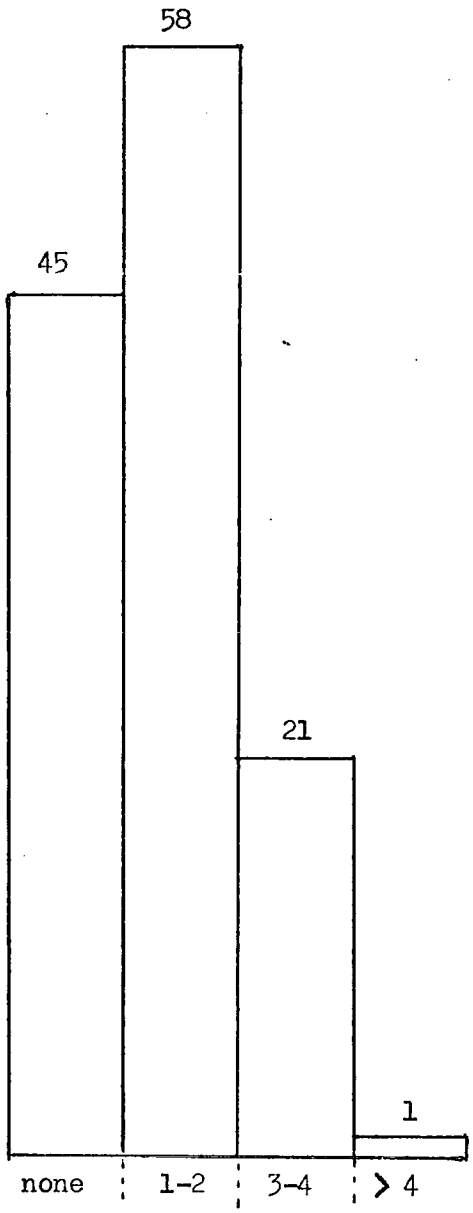
Histogram showing the Age-distribution, in years, for respondents

---

Sex distribution of respondents was as follows:

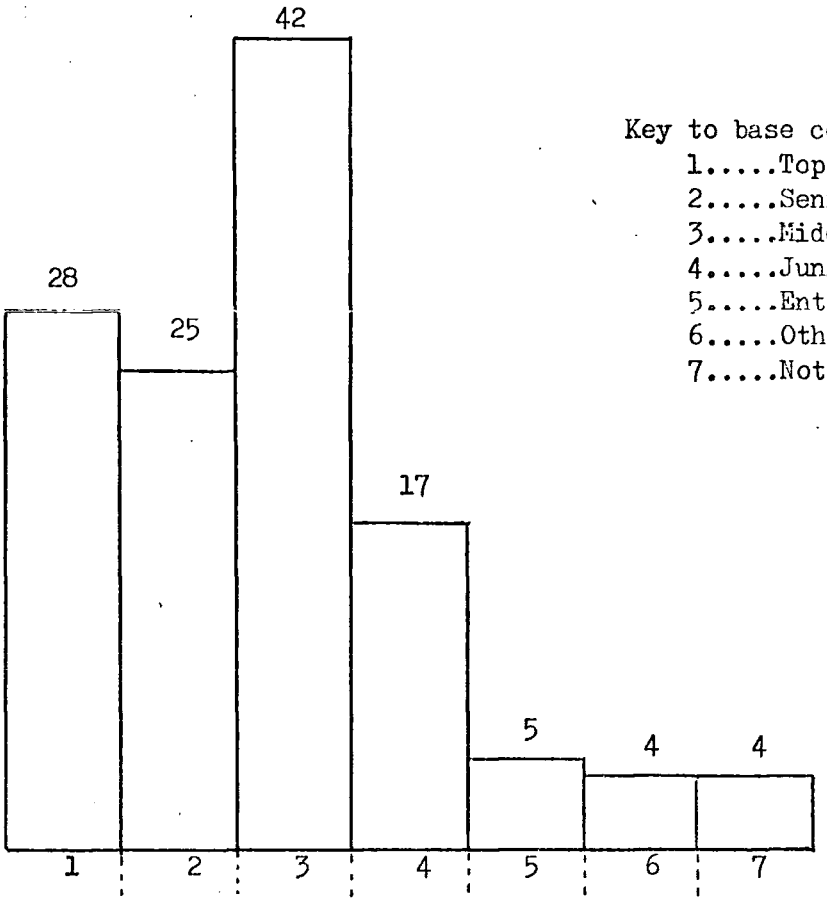
Males.....	114
Females.....	9
Unreported.....	2

Total number of respondents=125



Total=125 respondents

Histogram showing the number of children per respondent.



Key to base codes:

1.....Top Management
2.....Senior Management
3.....Middle Management
4.....Junior Management
5.....Entry level Management
6.....Others
7.....Not reported

Total=125 respondents

Histogram showing distribution of Hierarchical Position for respondents

---

Marital Status of Respondents was as follows:

Married.....	102
Unmarried.....	19
Seperated.....	3
Unreported.....	1

Total number of respondents= 125

Appendix to Chapter 12

Contents: Questionnaire used in study.....pp 9.

project:

Effective Job Design

for

Managerial Positions

questionnaire:

Managerial Position Incumbent's
views on

Propositions on Managerial Job Design

On completion, please return the questionnaire to:

M. J. Chaudri,
Durham University Business School,
Mill Hill Lane,
Durham. DH1 3LB

If you have any queries please telephone Jim Chaudri on (0385) 41919 Ext. 59

document MJC/79/1

Dear Research Participant,

Many thanks for agreeing to take part in this study on Job Holder's Views on Propositions regarding Managerial Job Design.

Purpose: The purpose of this research is to ascertain the views of job holders on the criteria for evaluating the design of jobs and principles for designing jobs. The principles and criteria in turn ar both related to Effective Job Design for Managerial Positions.

Format: The questionnaire is in 3 sections.

Section A - Respondent Information

Section B - Criteria & Principles of Job Design

Section C - Viewpoint adopted (2 questions only)

In section B are,

(a) a series of statements, to which the respondent is asked to indicate the importa ce he would choose to attach. The response is given by placing a tick in the appropriate column. The response space columns are labelled with "various degrees of importance".

(b) space is left blank where the respondent can write statements which he as a job holder has found to be of importance.

Note 1: Although the questionnaire has been pilot studied where it was tested inter alia for timing and clarity, there may still be some instances where a first glance does not bring out the meaning. In such a case it is recommended that you read all the options etc., before answering individual bits. However, as the quality of response is the key to the research, if you are at all uncertain about a question please telephone the researcher at Durham (0385) 41919 Ext. 59.

Note 2: Because of the nature of the document, the pilot study was unable to ascertain specific times that respondents might be spending on the document. The minimum time was 30 minutes; but the nature of the document entails projective thinking as well as recall of experience; those pilot study respondents who contributed the most spent up to 1 hour on it.

Yours faithfully,



(M. J. Chaudri).

SECTION A

RESPONDENT INFORMATION

1. Age of respondent:
   - i. younger than 25 years ..... ☐
   - ii. between 26 - 30 ..... ☐
   - iii. between 31 - 35 ..... ☐
   - iv. between 36 - 40 ..... ☐
   - v. between 41 - 50 ..... ☐
   - vi. between 51 - 65 ..... ☐
   - vii. older than 65 ..... ☐

2. Sex:
   - i. Male ..... ☐
   - ii. Female ..... ☐

3. How long have you been with your currently employing organization:
   - i. less than 2 years ..... ☐
   - ii. 2 - 5 years ..... ☐
   - iii. 5 -10 years ..... ☐
   - iv. 11 -20 years ..... ☐
   - v. more than 20 years ..... ☐

4. Please indicate the hierarchical level of the position you are currently occupying:
   - i. Top Management ..... ☐
   - ii. Senior Management ..... ☐
   - iii. Middle Management ..... ☐
   - iv. Junior Management ..... ☐
   - v. Entry Level Management ..... ☐
   - vi. Others, please specify: _____ ☐

5. Please indicate the functional classification of the position you are currently occupying:
   - i. Production ..... ☐
   - ii. Marketing/Sales ..... ☐
   - iii. Financial ..... ☐
   - iv. Personnel ..... ☐
   - v. General Management, Administration ..... ☐
   - vi. Staff-functions ..... ☐
   - vii. Purchasing ..... ☐
   - vii. Others, please specify: _____ ☐

SECTION B

CRITERIA & PRINCIPLES OF MANAGERIAL JOB DESIGN

Please indicate how important it is to you as a manager, that the following statements should be true in respect of any managerial job, by ticking the appropriate column

	1 of very low importance	2 of low importance	3 of medium importance	4 of high importance	5 very high importance
12. The job holder should know clearly what results are expected of him -					
i. in the immediate, medium and long terms					
ii. in terms of the quality of output					
iii. in terms of the quantity of output					
13. The job holder should know the reason why different outputs should have -					
i. different priorities assigned to them					
ii. the different grades of quality assigned to them					
iii. to be generated in expressed quantities					
14. The job holder should -					
i. be informed of the use made of the products of his endeavour					
ii. be able to assign meaning and wholeness to what he does and produces					

	1 of very low importance	2 of low importance	3 of medium importance	4 of high importance	5 very high importance
18. The job holder should feel able –					
i. to innovate					
ii. to use discretion					
19. The performance appraisal of any job holder should be such that –					
i. he knows the dimensions on which appraisal will be conducted.					
ii. the intervals between appraisals are commensurate with the nature of the task to be performed					
iii. the job holder has confidence in the process of appraisal					
iv. the appraisal includes consideration of whether the target setting was correct					
v. the appraisal is in terms of the results achieved					
vi. the appraisal is in terms of the effort put in					
vii. exceptional performance in between appraisals is noted and considered at appraisals					
viii. the job content is re-assessed in terms of organizational purpose and goals					

	1 of very low importance	2 of low importance	3 of medium importance	4 of high importance	5 very high importanc
22. The job holder should not <u>constantly</u> be involved in situations -					
(a) Opposed to his values					
i. social					
ii. moral					
iii. ethical					
iv. environmental					
v. political					
(b) i. at odds with his personality					
23. If a job holder wishes to leave the organization for reasons of situations militating against him, i.e. items covered in question 22, then he should not have to forfeit accrued benefits (pension rights etc.)					

	1 of very low importance	2 of low importance	3 of medium importance	4 of high importance	5 very hi importa
26. The job holder should be able to feel his worth through -					
i. a degree of influence in appointing his work-colleagues					
ii. a degree of influence in defining the goals of the organization					
iii. producing outputs which he can directly relate to the needs of the society					
27. Jobs contents should be determined -					
i. on the basis of 'co-optimization' on the following three dimensions: - organizational purpose - technological requirements - interpersonal & personal consideration					
ii. through discussion and consensus between the job holder and members of the organization who delegate authority to him					
iii. through discussion and consensus between the job holder and those with whom he interacts					

	1 of very low importance	2 of low importance	3 of medium importance	4 of high importance	5 very hig importan
32. The rewards system should –					
i. be based on job content					
ii. permit derivation of greater rewards for enhanced performance					
iii. allow discretion to those responsible for determining managerial rewards to show recognition of improved performance					
iv. be based on the same performance-reward equation for different levels of the organization (the higher rewards at senior levels stemming from difference in work)					
v. be based on the same performance-reward equation for different parts of the organization					
vi. be such that rewards at different levels maintain their motivational value					
vii. incorporate different concepts of rewards that individual job holders may choose to have					
viii. be adjusted as frequently as external dynamics demand, i.e. be adjusted to allow for different current rates for different specialism					

	1 of very low importance	2 of low importance	3 of medium importance	4 of high importance	5 very hig importan
35. Please write down Propositions on Managerial Job Design which: (a) you, as a job holder, would choose to add to those listed (b) you, as a job designer, would choose to add to those listed					

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