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AN EXPLORATORY STUDY OF THE RELATIONSHIP BETWEEN THE PHYSICAL ENVIRONMENT OF SCHOOLS AND PUPIL BEHAVIOUR

by

Onesemus Aganze Awiria

A thesis submitted for the degree of Doctor of Philosophy,
University of Durham

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Submitted 1994

School of Education
Faculty of Social Sciences



2 6 JUN 1995

Abstract

This thesis explores the relationship between the physical environment of school and the pupils' behaviour, with a secondary school focus. The study converged on this central question: In what ways may pupils' behaviour be linked to the physical environment of school?

The thesis begins with a critical review on definition of the educational aims of formal schooling, and a review of the extent to which the physical environment of school is an integral part of the total school climate. In the study, the physical environment of school is defined broadly as anything physical or material such as the school buildings, location of the school area, space, toilets, graffiti, litter, playing fields, heating conditions, lighting conditions, chairs, desks, instructional supplies, as well as crowding, noise, air conditions. Behaviour is also defined generally as: the acts or actions which a person actually performs, and two major characteristics of behaviour in school are identified: "good" and "disruptive" behaviour. The philosophical background which suggests an involvement of the physical school environment in the field of pupils' behaviour is explored. Also, an analysis of 'physical environment' in several psychological theories is produced. Two categories of the physical school environment of the secondary school are identified based on HMI Reports (1988-1991): "good" and "poor". The past debate on the relationship of pupils' behaviour and the physical school environment is critically analysed. For the empirical part of the research, first, 4 propositions were formulated:

1. That pupils' behaviour in a perceived "poor" physical environment in the school condition is not different from their behaviour in a perceived "good" physical environment in the school.

2. That pupils' behaviour is significantly related to the physical environment of school.

3. That schools with a negative physical environment will suffer more from disruptive behaviour than those with a positive one.

4. That children's behaviour varies according to the nature of the physical environment of the school and the classroom within which they are working. Here the focus was on the physical arrangements for specific school activities or subjects and behaviour in it.

In all, three secondary schools in two British cities were studied. Thus, no strategic conclusion can be generalised to other schools. The data generated and inferences drawn are illuminative.

The thesis reported in two empirical ways. Study one is connected with the way in which the physical secondary school environment can influence the attitudes of pupils and teachers – it is based on questionnaire analysis. The subjects were 115 pupils and TEN teachers in two schools. The results showed strong relationships between pupils'/teachers' attitudes and the physical school environment conditions, as illustrated by high percentage levels. The data also referred to pupils' attitudes of "like" and "dislike" for school – identifying that these attitudes are not directed to the school as a whole but rather addressed specific factor(s) or condition(s) within the school setting. Along with this attitude for "liking or disliking of school", the extended analysis showed the physical school environment conditions as playing an important role. Overall, the first data set suggests that attitude analysis is extremely important to understand how pupils/teachers respond to their perception of the physical factors within the school and how the school's physical environment shows it cares/ does not care about users' comfort and about the users generally.

The data generated by the first empirical survey yielded information not on the physical environment-behaviour link, but on the physical environment-attitude link. Field study two analyses attitude-behaviour consistency and behaviour-physical school environment

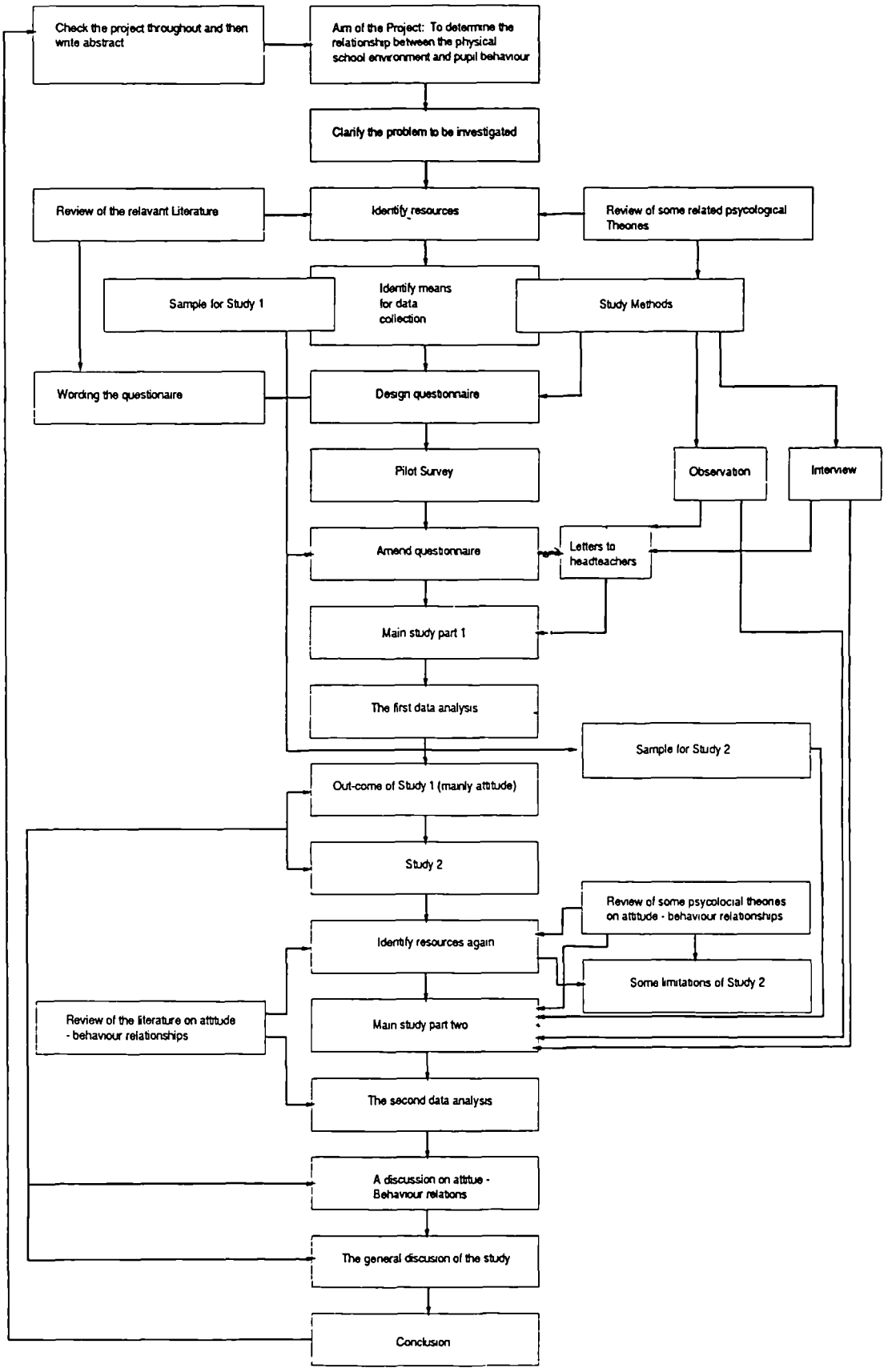
links. This led the researcher to a second level of analysis in which he explored theories which attempt to explain the process by which attitudes emerge as behaviour or not. The study was carried out in one school. Pupils aged 12-18 were observed in practical situations. In addition to the observation, four pupils of the sixth form and two teachers who had been in the school for a considerable time were interviewed. In fact, there were several methods used – again to provide a multi- perspective image of what happens in the 'natural' environment. The first step of the study two data interpretation dealt with the attitude-behaviour consistency issue. Although this relationship between attitude-behaviour is accepted in certain theories of social psychology (Allport, 1935; Heider, 1944. 1946, 1958; Festinger, 1957; Fishbein and Ajzen, 1975; Anderson, 1981), as marked by the phrase 'attitude is the readiness to respond', the present direct experience data showed no attitude-behaviour consistency. Rather, it demonstrated a complex picture and, in fact, the data suggest that attitudes should be regarded as unreliable for prediction of a particular overt behaviour.

Apart from the problematic nature of understanding attitude-behaviour relations, data on pupils' behavioural dynamics (actual behaviour in the natural environment) within the school reflected considerable connections with the physical environment conditions of their school/classroom. This evidence raises serious doubts about the reliability of the Rutter et al (1979) study conclusion that 'the relationship between pupils' behaviour and the physical school environment is not a significant one' (ibid: pp.101, 102). This thesis therefore suggests that to provide more complete information about the influence on pupils' behaviour of the factors within the school, the physical school environment characteristic deserves attention.

On a more general level, data also showed that children present good behaviour in areas of good physical school environment. For example, clean areas tended to stay clean and unclean areas engaged the pupils in certain behaviour such as littering and graffiti. This suggests that when the school physical setting conditions do not emphasise comfort,

caring and the kind of academic activity participation that the pupils consider part of a good school experience, then this can lead to expressions of negative attitude, and provide grounds for disruptive behaviour. This finding supports the hypothetical proposition that there will be more disruptive behaviour in a school with poorer physical environment conditions, as data showed schools/classrooms differ very remarkably in their physical setting conditions. Thus, it seems reasonable to argue on the empirical data that the physical school environment conditions are a significant influence on pupils' attitudes towards school. A theoretical structure drawn from Heider (1944, 1958), Festinger (1957) and Anderson (1981) offer a theoretical argument that these attitudes could influence pupils' behaviour.

Stages of the Study



Statement of Copyright and Declaration

Statement of Copyright

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Declaration

No material contained in this thesis has previously been submitted for a degree in Durham University or any other University.

In the name of Almighty God, the Beneficent, the merciful; and I say this with the late Richard Goodings in my mind, he was good.

Dedication

I dedicate this thesis to Her Majesty The Queen,

Ma'am Elizabeth.

In gratitude and goodwill.

For this and Her Majesty's Blue ink.

Acknowledgements

The extent of my intellectual debt to my supervisors, John McGuiness and Jack Gilliland will be obvious to anyone who reads this thesis. Their critical views and encouragement at all stages of this work was extremely helpful. Professor Richard Pring of Oxford University, Dr Phillip Hills of Cambridge University and Mrs Pat Morgan, my great friend, have also read and criticised early drafts of some of the chapters; their criticisms and suggestions were instrumental in eliminating some of the worst errors of fact and logic, as well as the more glaring inelegances of style, for that draft.

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The work would have been impossible without the assistance of the Librarians. To all of these go my grateful thanks for allowing access to rare books and documents. In particular, I should like to thank the librarians of Durham University; Oxford University – Bodleian Library/Department of Educational Studies Library/ Department of Experimental Psychology Library and the British Library Document Supply Centre.

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For the duration of the work described in the thesis I was based in the School of Education, Durham University and I am very grateful to Professor G. Grace for providing office space and facilities. These thanks are extended to Rector Sir Maurice Shock, Kt. and Professor Alan Cowey of Oxford University, Lincoln College, who were so helpful and gave me accommodation during my stay in Oxford, where part of this study took place.

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Contents

Abstract i

Statement of Copyright and Declaration vi

Dedication viii

Acknowledgements ix

Contents xii

List of Appendices xvi

List of Tables xvii

List of Boxes xix

List of Figures xx

Abbreviations xxi

Chapter 1

Introduction 1

The theme and aims of the study 1

The paucity of previous research into the area of the relationship between the physical environment of school and pupils' behaviour 2

The significance of the study 5

The means of the exploration of the relationship 6

Structure of the thesis 6

Chapter 2

Some conceptual groundwork: design, the physical school environment, school, school aims, pupils' behaviour and teachers 8

Introduction 8

Defining the physical environment of school 9

The implications of different ways of defining the physical environment 14

The school as an organisation 16

The school aims 17

Behaviour 24

Good behaviour in school 25

Definition of disruptive behaviour in school 26

Some conclusions regarding terminology 35

School teachers 38

Summary 39

Chapter 3

Consideration of relevant approaches to understanding behaviour 41

Introduction 41

Improving pupils' behaviour through improving the physical environment of schools: Establishing the case 41

The physical environment and behaviour relationships 41

'Environmental' psychology': establishing the case 43

The idea of a whole school approach to behaviour 51

Causality and behaviour: the case of the school physical environment 57

Summary 59

Chapter 4

Consideration of relevant psychological theories 61

Introduction 61

The rationale behind use of theory 61

Skinner's operant conditioning theory 62

Psychoanalysis 65

Lewin's field theory 68

Ecological psychology approach 71

Summary 74

Chapter 5

A review of recent HMI surveys on the physical environment of schools 80

Introduction 80

HMI document survey 81

Opposing characteristics 81

School differences 87

Variation between classrooms within one school 88

Design and building 89

Additional analysis 90

Comments and implication of the present study 93

Chapter 6

Literature review of pupil behaviour – the physical school environment relationships 95

Introduction 95
Critical review of the key texts 96
The general review section 108
School buildings and behaviour 109
Behavioural study about lighting 112
Heating and behaviour 113
Toilets in schools and behaviour 114
Material resources and behaviour 116
Furnishing and behaviour 119
Crowdedness and behaviour 124
Sports facilities and behaviour 129
Noise and behaviour 130
Littering and behaviour 133
Graffiti and behaviour 134
Influence of the above on this research 135
Comments 137
Summary 138

Chapter 7

Hypothetical propositions 140

Introduction 140
The hypothetical propositions 140

Chapter 8

Methodology 144

Introduction 144
Context 145
The schools 147
Subjects (respondents) 148
Research method descriptions 149
Rationale used in selecting the methods of study 150
Method of observation 151
Questionnaire 160
Interview study 166
Summary of the three methodologies contrasted 172
Pilot study 176
Anonymity 176

Chapter 9

Presentation and analysis of data **177**

Introduction 177
Result of the field study 1 180
Extended analysis: pupils' like and dislike for their school 222
Teachers' attitude and behaviour issues with regard to the physical school environment characteristics 235
Note 238
Study 2 240
Attitude-behaviour relations 240
What are attitudes? 240
Consistency between attitude and behaviour 246
Empirical evidence on attitude-behaviour consistency 254
Analysis of data set 1 based on Anderson's five essential attitude elements 258
An interpretation of the questionnaire using Anderson's five elements of attitude 266
The inferential limitations of study 1 273
The links between the inferential limitations of study 1 and Anderson's theory 276
Preparation of a framework for study 2 278
Results of study 2 288
Extended analyses of attitude-behaviour consistency 316
Discussion and some conclusions on attitude-behaviour relations 318
Note 322

Chapter 10

The general discussion **324**

Introduction 324
Hypothetical proposition 1 324
Hypothetical proposition 2 328
Hypothetical proposition 3 337
Hypothetical proposition 4 339
Other issues 343
Recommendations 353

Chapter 11

Conclusion **360**

Bibliography **375**

Appendices **397**

List of Appendices

1. What makes disruptive behaviour in school appear unique and require multi-dimension approaches? 397
2. Open rivalry for a favourite toy, perhaps it is the only one? 403
3. The pupils and teachers who favour a better work environment 404
4A. An introduction letter to head of secondary schools 405
4B. An official introduction letter from the University to head of secondary schools 406
5A. The questionnaire to pupils 407
5B. The questionnaire to teachers 410
6A. The observation guide 413
6B. The observation recording form 415
7A. Interview form for pupils 416
7B. Interview form for teachers 418
8. The pupils' view of the school uniform 420
9. The methods of research used by HMI (1987) and Elton Report (1989) 421

List of Tables

1. Definition of disruptive behaviour offered by Lowenstein, Galloway, Ball, Bloomfield and Seyd; Tattum 29
2. The three views of behaviour problems offered by Glynn, Merrett and Houghton. 32
3. HMI diagnoses of the items of good physical environment of schools 82
4. HMI diagnoses of the poor physical environment of schools 84
5. Percentage of categories of the physical school environment characteristics identified with respect to HMI reports 91
6. The questionnaire response rates 180
7. The pupils' responses to the question: "How long have you been a student in this school?". 181
8. The teachers' responses to the question: "How long have you been teaching in this school?" 181
9. The pupils' responses to the question: "How much do you like the school?" 182
10. The teachers' responses to the question: "How much do you think pupils like the school" 183
11. The pupils' responses to the question: "In general when you are judging whether you like a school or not, how important are the following elements?" (There were 12 elements) 184
12. The teachers' responses to the question: "The following are some of the more frequently quoted elements of school. Please indicate the degree of importance you as a professional teacher attach to each of these elements to judge whether pupils would like a school or not?" (There were 12 elements) 186
13. The pupils' responses to the question: "Below is a list of 10 important aspects of the physical environment of school. Please write 1, 2, and 3 against the three most important things for you.". 189
14. The teachers' responses to the question: "Below is a list of 10 important aspects of the physical environment of school. Please write down 1, 2 and 3 against the three most important things you, as a teacher experienced in management of pupils' behaviour, think are to your pupils." 189
15. The pupils' responses to the question: "You know, different schools have different conditions in terms of its physical environment. In your school, how do you rate the following facilities?" (There were 20 items) 197
16. The teachers' responses to the question: "You know, different schools have different conditions in terms of its physical environment. In your school, how do you rate the following facilities?" (There were 20 items) 198

17. The pupils' responses to the question: "How do you think each of the following would effect your behaviour if they existed in your school?" (There were 15 items) 200

18. The teachers' responses to the question: "What effect do you think the following would have on your pupils' behaviour if they existed in your school?" (There were 15 items in the list) 201

19. The pupils' responses to the question: "Please read each of the following statements. Put one tick in the box which best shows how you feel about the statement." (There were seven statements) 212

20. The teachers' responses to the question: "Please read each of the following statements. Put one tick in the box which best shows how you feel about the statement." (There were seven statements) 216

21. Analysis of responses of those pupils who 'like their school' and those who 'dislike their school' to the question: "In general, when you are judging whether you like a school or not, how important are the following elements?". 224

22. Analysis of responses of those pupils who 'like their school' and those who 'dislike their school' to the question: "Below is a list of 10 important aspects of the physical environment of school. Please write 1, 2 and 3 against the most important things for you." 226

23. Analysis of responses of those pupils who 'like their school' and those who 'dislike their school' to the question: "You know different schools have different conditions of its physical environment. In your school how do you rate the following facilities?" 228

24. Analysis of responses of those pupils who 'like their school' and those who 'dislike their school' to the question: "How do you think each of the following would affect your behaviour if they existed in your school?" 230

25. Analysis of responses of those pupils who 'like their school' and those who 'dislike their school' to the question: "Please read each of the following statements. Put one tick in the box which best shows how you feel about the statement." 232

26. The noted pupils's positive or negative reaction to the physical school environment factors – the pupils' own responses. 306

27. The noted pupils' positive or negative reaction to the physical school environment factors – the teachers' responses 310

28. An extended analysis based on attitude-behaviour consistency. 317

List of Boxes

1. Social/physical environment – human behaviour relations in practical terms 46
2. The dilemma string or relationships between pupils' behaviour and the physical environment of their schools 104
3. A comparative view of the status of the Rutter study and the HMI Reports and Elton Report 107
4. Contrast of the observation, questionnaire and interview 172
5. Current literature reviewed on the subject of attitude-behaviour consistency 253
6. Definition of questionnaire of the present study in terms of Andersonian (1981) "essential" components of attitudes. 266

List of Figures

A1. The three elements in interaction (psycho-socio-physical). 47

A2. The complex influence on human behaviour 48

B1. The main parts of the school 55

B2. Perspective of the whole-school approach: complex relations in school. 56

C Data from Table 3: frequency diagram showing the occurrence of categories both of good and poor physical environment of the schools 92

D Children queuing to use an outside toilet 116

E Data summary of Table 13: the position in importance of the physical school environment in the context of the pupils' perception. 190

F Data summary of Table 14: the position in importance of the physical school environment in the context of the teachers' perception 191

G The findings for inclusion of the physical environment of school in the field of pupils' behaviour management. These graphs represent a more summarised form of data from Table 19 213

H The findings for inclusion of the physical environment of school in the field of pupils' behaviour management – teachers' views. These graphs represent a more summarised form of data than Table 20. 217

I Summary of data from Table 21: Diagram showing the importance given to the physical school factors in judging whether the pupils will like the school or not 225

J Summary of data from Table 22. Diagram showing the views held by pupils towards the relative importance of different elements of the physical environment of school 227

K Summary of data from Table 23. Diagram showing characteristics of the physical environment of school – perspective of the pupils' own views 229

L Summary of data from Table 24. Diagram showing attitude responses referring to influence of the physical environment of school on the pupils' behaviour 231

M Summary of data from Table 25. Diagram showing views towards a valuation of pupils' behaviour in the context of the physical settings of school itself 233

Abbreviations

BC	Before Christ
DB	Disruptive Behaviour
DBS	Disruptive Behaviour in School
DES	Department of Education and Science
DFE	Department for Education
Ed	Edit
EDRA	Environment Design Research Association
e.g.	For example
HMCIS	Her Majesty's Chief Inspector of Schools
HMI	Her Majesty's Inspectors
HMSO	Her Majesty's Stationery Office
Ibid.	In the same book
i.e.	That is to say
IFFP	Interview form for pupils
IFFT	Interview form for teachers
ILEA	Inner London Education Authority
LEA	Local Education Authority
M.Ed.	Master of Education
No.	Number
NUT	National Union of Teachers
%	Percentage
OPCS	Office of Population Censuses and Surveys
ORACLE	Observational Research and Classroom Learning Evaluation
p.	page
pp.	pages
Ph.D.	Doctor of Philosophy
UK	United Kingdom
USA	United States of America
Vol.	Volume

Chapter 1

INTRODUCTION

> Things are made with attention to their function and their aesthetic qualities ...; good design starts from the premise that living is more than just a matter of existing, and that everyday things which are both effective and attractive can raise the quality of life ... What is not good ... gives the consumer the power to affect his or her environment ... Things must do the job they were intended to do; they must be well made and efficient; they must also be pleasing to use and to the eye.
>
> (Bayley, 1985:p.iv)

THE THEME AND AIMS OF THE STUDY

The work described in this thesis is an attempt to explain pupils' behaviour in relation to the physical environment of school. The project's main aim was:

- to gather information on the possible existence of relationships between the physical school environment characteristics and the behaviour of pupils in 3 British secondary schools.

A secondary and subsidiary aim was:

- to explore the physical environment of school as a possible part of behaviour management processes in the secondary schools. In other words, it was hoped that the research would contribute to the body of knowledge in the area of behaviour management in schools and that those who deal with pupils would use the findings to enhance the positive impact on pupil behaviour of the physical environment.

The study was motivated by the general question: in what ways may pupils' behaviour be linked to the physical environment of school?

This is the first analytic study of its kind in British Secondary Schools.

THE PAUCITY OF PREVIOUS RESEARCH INTO THE AREA OF THE RELATIONSHIP BETWEEN THE PHYSICAL ENVIRONMENT OF THE SCHOOL AND PUPILS' BEHAVIOUR

Statement of the problem: The link between pupils' behaviour and the physical school environment has not yet been systematically analysed in British secondary schools, despite frequent assertions in the literature that such a link exists.

The Research Problem Background:

The background of this study covers two issues and I present them in turn as follows:

The first issue is that behaviour in school and, particularly, disruptive behaviour problems in secondary schools have been a subject of great concern in Great Britain. For example, the Elton Report (1989) recommends that educational psychologists, headteachers and staff at all schools should be alert to signs of disruptive behaviour, identify factors that influence it and deal firmly with all such matters. In a similar vein, HMI (1987), Department for Education (1993) and HMCIS (1993) recommend that research into behaviour and discipline in schools is to be carried out repeatedly; because it will help sustain teachers' efforts and help provide a better basis for the effective management of pupils' behaviour. The present study responds to this concern.

The second issue concerns, then, my proposed connection between the physical environment of school and pupils' behaviour. Many psychologists argue that this physical environment-behaviour link exists. Lewin's (1951) work known as "field theory" which recognises the influence of environment on behaviour, for instance, stresses that behaviour cannot be fully understood in isolation from the social and physical environment in which it occurs. This notion is central to the approach of Barker (1968) who argues that, to a great extent, the social and behavioural sciences have studied people almost as if they were separated from physical environment. In his work on social environment influence on behaviour Skinner (1974) explains that when a mother feeds her child, the food as a primary reinforcer is physical, though the mother's behaviour in

presenting it is social; and, on the basis of this, he then argues that in any analysis of behaviour it is important to consider not only social environment but also the physical features which the environment may possess. Thus, a prima facie case exists for the physical environment of school having links with pupils' behaviour.

It is surprising therefore that there is no systematic research in this area. Schools are a behaviour-setting in the sense that the behaviour and physical objects that constitute the school setting are organised and arranged to form an arena for behaviour which is by no means random. Schools do operate according to rules and are expected to perform an essential behaviour setting function. Moreover, the school environment has been recognised as influential upon pupils' behaviour (Rutter et al, 1979; Hargreaves, 1980; Lawrence et al, 1984; Galloway and Goodwin, 1987; HMI, 1987; Docking, 1987; Watkins and Wagner, 1987; Elton Report, 1989), but in this research the elements which constitute the school environment are loosely defined emphasising rather social environment elements and excluding the key element for this study, the physical environment. As far as the notion of behaviour-setting is concerned, the social and physical environments, whether good or poor, can seem influential on behaviour. Thus, the importance of the physical elements of school as behaviour-setting should be taken seriously and fully addressed.

There is descriptive research in this area (HMI, 1987). There is also exhortative research - as, for example, these quotations from a detailed independent inquiry (Coffield, 1991) and a pragmatic document on discipline in schools commissioned by the British Government (Elton, 1989) make plain:

> "Considering the influence of buildings upon those within them, we noticed that their design, as well as the maintenance, is of importance. We found that in a number of schools, even of recent design, quite elementary requirements had been overlooked. In particular we would emphasise the need for adequate space for circulation between rooms and the need for staff to have a good view at all times of the pupils in their charge. Neglect of either point result in difficulty of supervision ... The impact of major maintenance work, such as re-wiring, can clearly be very disruptive if undertaken in term time. It can not only disrupt school routines but also have a disturbing effect on pupils' behaviour."
>
> (Elton Report, 1989: p.117)

> "... practical teachers would like to see ... given more prominence in the debate on school vandalism: the impact of dirty, poorly maintained and dilapidated buildings on the behaviour of young people."
>
> (Frank Coffield, 1991: p.84)

Although these exhortations seem to agree with the notion that the physical environment of school influences pupils' behaviour, they do not escape criticism. The criticism is that such exhortatory assertions have no systematic empirical basis. Theoretical ideas only are not an adequate information base for understanding the origin of behaviour in schools. There should be evidence drawn from field data.

Another background indicator of the state of research in this area is that other approaches which investigate the physical environment of the school-pupil behaviour relationship are weighted towards one specific aspect of the physical factor characteristics, such as litter or graffiti (Robinson, 1976; Coffield, 1991; Reynolds and Cuttance, 1992) without giving a reason for selecting one specific element to the neglect of others. In addition, separate locations of the school may have separate arrangements for conditions and activities: the patterns of behaviour may be different through the use and arrangement of areas. For example, litter may be associated with disruptive pupils' behaviour, but inadequate heating of classrooms in winter may define the extent to which the school cares for pupils (Lawrence et al, 1984). Thus, to focus on only one aspect of the school's physical settings seriously misses the point that we are dealing with a complex issue when considering behaviour in school. It should be noted here that a working definition will be developed in later chapters. In other words, the full cultural message of the physical school setting would also require attention.

In brief, this section argues that behaviour in secondary schools has been of great concern in Great Britain and the present study responds to this concern. More specifically, the section puts forward the idea that many psychologists argue that a physical environment-behaviour link exists. From this notion, it draws the proposition that a prima facie case exists that the school physical environment influences pupils' behaviour. It then raises

the problem that this area has received little research attention. Further, it mentions that there is descriptive, exhortative and discrete research in this area. The important question now is: what do I do with this information? The answer is, of course, that these views motivate the present inquiry to take the physical environment-behaviour link on to an empirical systematic inquiry.

THE SIGNIFICANCE OF THE STUDY

The author would argue that the present study is significant for the following reasons:

1. The study is an attempt to explore systematically a proposed connection between the physical environment of school and pupils' behaviour. That is significant because, in the available literature, I have not yet found anyone who has directly addressed this issue.

2. The study demonstrates a new approach in responding to pupils' behaviour by adapting the concept of physical environment psychology, sometimes known as environmental psychology. As far as I know, this concept has not been employed by previous researchers in the field of behaviour management in British Secondary Schools.

3. The study does not set on one side the numerous reviews of written material on this topic. Once the initial data have been drawn from it, the research literature is extensively used to analyse the result of the empirical study.

4. Further significance related to the study exists in the conclusions for practice which appear at the end of the study.

5. Furthermore, the significance of the study is heightened since behaviour in school is an issue which is causing difficulty to educationalists (Galloway and Goodwin, 1987; HMI, 1987; Watkins and Wagner, 1987; Elton Report, 1989; Coffield, 1991; Department for Education, 1993; HMCIS, 1993). Thus, the present study looks at a topic which is of declared significance to educationalists.

THE MEANS OF THE EXPLORATION OF THE RELATIONSHIP

Specifically, the relationship between the physical environment of school and pupils' behaviour is explored through:

1. A discussion of definitions: the physical school environment, school aims and pupils' behaviour.
2. A discussion of the HMI (1988-1991) identified characteristics of the physical environment of school, based on 30 key documents.
3. A discussion of philosophical and theoretical work which is relevant to the study.
4. A discussion of previous research: inadequacies, findings and suggestions.
5. A field study. The empirical analysis consisted of two parts. Part 1 of the analysis consisted of questionnaire surveys of Year 9 and Year 10, as well as teachers in 2 comprehensive secondary schools.
6. The second part of the inquiry started with a discussion of theories/some previous findings on the subject of attitude-behaviour relations; and the methods used at this level of the study, specifically in field analysis, consisted of observation and interview. In addition, throughout the study photographs were taken to illustrate some of the links under study.
7. A discussion of the data obtained in the school context concerning the proposed relationship between the physical environment of school and pupils' behaviour, and then conclusions drawn from the analysis.

STRUCTURE OF THE THESIS

The following section describes the structure of the thesis. Chapter 2 discusses and defines key concepts/terms used in the study.

The face validity of the concept of a physical environment-behaviour relationship in school, and questions such as 'why should we include the physical school environment in the field of behaviour research?', the concept of "physical environment psychology", a whole-school behaviour approach and causal approach to behaviour are discussed in Chapter 3.

Chapter 4 reviews four behavioural theories relevant to the field of physical environment-human behaviour relationships. It also explains their relationship to school behaviour management processes.

Chapter 5 presents some characteristics of the physical environment of British secondary schools, as identified by HMI Reports (1988-1991).

Chapter 6 reviews literature that examines the influence of the physical school environment on pupils' behaviour, first focusing comparatively/critically on the Rutter et al (1979) findings and on current pragmatic documents of the British Government: the HMI (1987) and the Elton (1989) Reports. It then goes on to look at some of the proposal statements made which focus research attention on this area of the schools (as mentioned earlier in this chapter).

Chapter 7 presents the hypothetical propositions explored in the field study.

Chapter 8 discusses the research methods used for data collection, in some detail.

Chapter 9 sets out the findings. It also focuses on definitions/theories/relevant previous studies of attitude-behaviour consistency to help analyse how the physical school environment characteristics might influence pupils' behaviour. As part of this chapter, I offer an analysis of attitude-behaviour consistency, highlighting the practical quality of their relationship and weaknesses as a way of explaining pupils' behaviour.

Chapter 10 discusses the results of the study, in general. A conclusion of the discussion of the study is to be found in a short final chapter.

CHAPTER 2

SOME CONCEPTUAL GROUNDWORK: DESIGN, THE PHYSICAL SCHOOL ENVIRONMENT, SCHOOL, SCHOOL AIMS, PUPILS BEHAVIOUR AND TEACHERS

> "To discuss relationships between physical settings and behaviour meaningfully, it is necessary to define carefully not only the behaviour that is to be measured and evaluated but also the physical settings".
>
> (Heimstra and McFarling, 1978:p.5)

INTRODUCTION

Before going any further, it will be as well to examine the terms used in this study. Hills (1982) among others, argues that although when we have consulted a dictionary and found out what a word means, we should then know how to use it – it is mainly through the use of a word that the meaning is shown. For Gordon and Lawton (1984), and Barrow and Milburn (1986), it is argued that the meaning of a term or word lies in the user. The point of argument is that the same word might mean different things to different people. As a result of this problem, many educational writers mention that it is compulsory to define terms used in educational research (Tattum, 1982; Kauffman, 1989; HMCIS, 1984). Therefore this chapter will argue that in order to explain the behaviour of the pupil-physical school environment relationship, definition of formal aims of schools, design characteristics of the physical environment of school, behaviour, particularly of pupils, both good and disruptive, and teachers' perceptions are important. The young people in question are often referred to as "students or pupils". The focus of this chapter is to conceptually analyse the aim/design/physical arrangement of school, and what children's and youths' behaviour in school can be like. Clearly, says the Elton Report (1989), 'Children's behaviour in school is seriously complex and at times definition can be useful for at least these purposes: to guide delivery of services to children and youths through administrative channels, to reflect a particular theoretical position or structure of a discussion.'

DEFINING THE PHYSICAL ENVIRONMENT OF SCHOOL

The term physical environment, in the definition of Heimstra and McFarling (1974:p.3), connotes everything physical that surrounds a person. Lemleck (1974:p.49) has said that the place which brings children together called a 'school' is mainly an arrangement of the physical environment such as chairs, desks, lighting, ventilation, acoustics, and instructional supplies. For a long time it has been accepted that the arrangement of this type of school environment must be specific (the formal arrangement) and is primarily important. As Spencer, Blades and Morsley (1989) suggest, the physical world of school is not simply to be seen as a neutral background of pupils' social interactions and individual development but that it has a profound influence in suggesting, shaping, facilitating, and sometimes preventing behaviour.

In fact, Socrates was one of the first to argue that the bodies and minds of young people are affected by their physical surroundings and that the future guardians of society should dwell in a wholesome climate where "some influence from noble works, constantly falls upon eye and ear from childhood upward, and imperceptibly draws them into sympathy and harmony with the beauty of reason" (Plato, *The Republic*, cited in Foxley, 1941:pp.111,401). This is what Socrates thinks, but is this what schools do?

John Dewey (1916) has added to that dimension, with special reference to education for young people, by noting that:

> "... the only way in which adults consciously control the kind of education which the immature get is by controlling the environment in which they act, and hence think and feel. We never educate directly, but indirectly by means of the environment. Whether we permit chance environments to the work, or whether we design environment for the purpose makes a great deal of difference. And any environment is a chance environment so far as its educative influence is concerned unless it has been deliberately regulated with reference to its educational effects."
>
> (Dewey, 1916:p.22)

Dewey was very careful in his thinking to make clear what kind of physical environment would constitute the ideal school from the point of view of a child development specialist.

He considers that the physical design of a school that is not directly associated with students' activities will hinder its functions:

> "We should either have to ignore and repress the activities or else to humour them. But if we have organisation of equipment and of materials ... we can direct the child's activities ... and this can lead to the goal."
>
> (Ibid:p.38)

Dewey instanced the fish environment — considering water as the environment necessary to its life, because water defines the fish's activities and makes it look distinctive (ibid:p.14). He maintains that the educative school must constitute the physical environment to which all of its parts respond directly. In other words, for Dewey, unless the school had been deliberately designed with reference to its specific purpose (as defined earlier) (ibid: p.51) it may fail to be effective in handling many of its expected activities. Dewey's definition of the physical environment of school which indicates positive practice would include, provision of clean rooms, a workshop for all subjects, the laboratory adequate for the child to work, the materials, the adequate tools with which the child may construct or create or actively inquire, and adequate space for the child in all the activities of school. What strikes me as a problem is, it seems everything has been thought of before. The challenge is to think of it again, so that, with regard to the physical environment of the school, it can be refashioned to the present. Dewey's whole thinking demonstrates his view that the physical environment and/or the arrangement of schools is an essential part in terms of its formal system (this will be discussed later (ibid: pp.22-23) in more detail when reflecting on the whole-school approach). Design of school, according to Dewey, should always satisfy the activities and lifestyle desired there. It might be noted in passing that like Socrates, and the HMI (1987), Elton (1989) and Coffield, these are not empirically conclusive, but exhortations drawn from prima facie common sense.

Kay (in the *Handbook of Educational Ideas and Practices*, 1990), too, had this to say about the design of the school:

> "The design of an educational building has of course to meet the needs of the first users and their educational requirements."
>
> (p.414)

For a long time this view has been accepted in the United Kingdom (UK). In a book entitled *Educating the Intelligent* by Hutchinson and Young (1962) the following passage makes it plain that:

> "... secondary school architecture should stimulate the child to further efforts and discoveries. Once the child is bored by his environment education will have failed in its main purpose of building personality. This aim, ... should be the purpose of a secondary school."
>
> (p.221)

The fact that, in this quotation, the phrase "aims" is used suggests that school physical environment exists and is expected to serve aims.

Also, the Department of Education and Science (DES, 1977) suggests that the architecture of school is of great importance and that it must be educative and with admirable qualities for the children:

> "To provide, in accordance with the aims of the education acts, school accommodation — whether in new or existing premises — sufficient and suitable for both pupils and staff."
>
> (p.3)

If this is what is expected of design of schools, what should define its formal distinctiveness? Or how should it look to meet the expected goals? (What characteristics distinguish it or what makes it different from other settings?)

From this, perhaps, follows the most detailed definition of the desired physical environment of school:

> "Features of the buildings reflect the faculty's point of view about learning ... The physical setting reflects conditions deemed essential for effective teaching and learning. For example the elementary rooms are spacious, 32 feet square, with adequate natural lighting through translucent windows in the ceiling and sliding glass doors and windows on the north side. Abundant shelves and closets are built into the other three walls — enough to satisfy the most material-conscious teacher. Each classroom in grades Kindergarten through eight is provided with a sink, drinking fountain, and work shelves. In addition, classrooms in grades Kindergarten through three have boys' and girls' rest rooms. Equipments for science, art crafts and music is comfortably housed. Taking advantage of Florida's year-round temperature climate, outdoor class space, adjacent to the elementary classroom, provides that extra room a teacher so often desires. These outdoor classrooms are equipped with work benches, tool sheds, water fountains, and space for plantings. Although not

having outdoor space features, the high school rooms are large and well-equipped. The various departments are housed in separate buildings: one for science, others for arts and industrial arts, home economics, and business education. Fourteen general purpose rooms are provided for care and other subject areas. Each classroom has its own unique colour scheme and is pleasant, comfortable, and attractive. A small creek, winding through the centre of the campus, separates the elementary from the secondary classrooms. The service areas are located along the creek. Included in the service areas are an administration unit, a psychological and health clinic, auditorium, music rooms, materials centre and library, and a spacious cafeteria."

(Myers, Hill and White, 1959:pp.371-372)

Different government documents have considered school designs with the recommendations of the 1944 Education Act, the 1988 Education Act and the Elton Report (1989) all pinpointing the need for improvement.

The official documents classify the buildings required (Elton Report, 1989: pp.265, 270) for different school purposes. They also lay down in considerable detail the minimum requirement for the amount of space both inside and outside the buildings, equipments, size of laboratories, workshops, gymnasia, displays, storage, litter-bins, administrative offices, lighting, ventilators and even pram sheds.

The following quotations drawn from a variety of sources also reveal the characteristics of the physical environment of school particularly required of the secondary schools, in Britain:

1) "Corridors and verandahs should be from six feet to eight feet wide, according to the size of the school, and well lighted, especially where there are short flights of steps between different levels."

(HMSO, 1936:p.61)

2) "The science laboratory .... should not be less than about 600 sq. feet, and it would be an advantage if it could be increased by about 100 sq. feet. It should be equipped with the essential services and preferably with demonstration services .... The laboratory itself will need to be fully equipped for specialist use, but if .... a preparatory room is essential, of not less than 10 feet in width and 250 feet in area."

(Ministry of Education, 1950:p.43)

3) "... a secondary school building .... it is fitting that the main entrance to it should be spacious and dignified and, if possible, give an immediate key to the character of the whole school. It should not be a show-place in the sense of a

space designed only to impress parents and visitors, but rather a space wherein the work of the school, as well as the necessary notices pertaining to it, can be exhibited and from which the rest of the school can easily be reached."

(Ariba and Ariba, 1953:p.125)

4) "The toilets should be dispersed throughout the school. If the school is organised on a house system, some of them should be associated with the house bases and the remainder dispersed throughout the teaching blocks. It is essential that some toilets accommodation should be associated with the physical education suite. Provision of wash-hand basins .... a strip of mirror, not above the wash-hand basins, is always required."

(Scottish Education Department, 1973:p.14)

5) "The secondary school pupils should permit the achievement of the appropriate space standard of 70 sq. ft. per pupil."

(DES and Welsh Office, 1977:p.18)

6) "In order to create conditions which enable teachers and pupils to see well at all times, it is essential that both lighting quality and quantity are given careful consideration at the design stage. The minimum maintained level of illumination at the working place specified in the school premises regulations is 108 Lux, but to be sure of achieving this standard in all teaching areas, the average level, whether daylight or artificial light, should be no less than 150 Lux. With the use of fluorescent fittings, it should be increased to no less than 300 Lux in order to avoid what often appears to be an unpleasantly dull visual environment."

(DES, 1980:p.22)

7) "The school premises regulations specify the minimum design temperature which must be maintained when the external temperature is 0°C. In academic subjects departments, where the level of activity and the clothing worn is about average, the recommended temperature is 18°C + 2°C in the heating season and 23°C outside the heating season, subject to a permissible park temperature gradient between floor and ceiling to 3°C."

(DES, 1981:p.23)

8) "The site should provide the institution with service roads, car parking and if possible some outdoor recreation areas for the student."

(DES, Architects and Building Group, 1986:p.15)

This plethora of the material is clear evidence of the attention given to physical environmental conditions in official and unofficial documents. It is also significant to note its exhortatory and non-empirical nature.

THE IMPLICATIONS OF DIFFERENT WAYS OF DEFINING THE PHYSICAL ENVIRONMENT OF SCHOOL:

Although the standards seem important it is impossible to assume that at the moment schools are designed with these recommendations in mind (Stone, 1990). Architects need more information and more research information in designing secondary schools. The point is that architects could learn from previous good practice, choosing the site, the position of the school, using the close involvement of the educators. Ariba and Ariba 1953 said that:

> "How colour is used is a matter for the architect."
>
> (p.136)

This particular quote appears to argue that people are not given the chance to choose the colour they want, rather it is something imposed on people by architectures. Such imposed situations may make people feel unhappy to such an extent that they may damage the building. This may explain some of the criminal damage inflicted on schools.

Also, things change over time. For example, the DES (1987) survey reports that 17% of the secondary schools in the country were overcrowded, the average space was reported to be 9.0 sq. m. per pupil with 5% in temporary accommodation on average; and it was reported that one in ten secondary schools had over 22% temporary accommodation. Similarly, the annual report of the Senior Chief Inspector of Schools (HMI, 1991:0.11) claims that, nationally:

> "The general condition of the fabric of building and the state of internal decorations in many secondary schools continue to be unsatisfactory."

Many secondary schools suffer, says Coffield (1991), wilful damage to their sites, the deliberate destruction of parts of vulnerable school building components. Thus, it follows (as we shall see as the study unfolds) that the physical environment of schools is far from uniform, despite clear requirements of the 1944 and 1988 Education Acts. The point which HMI (ibid) and Coffield (ibid) attempt to make which seem relevant to the design

of the school is that the physical environment of school is not static, and that the changes do have implications for school aims.

Another point to draw from the above descriptions of the physical school environment is that different writers seem to have different ways of establishing definition. Some writers relate the physical school environment to the school aims, some define it in terms of width of corridors/ main entrance/ verandahs, some define it in terms of centigrade of temperature and other writers define it in terms of cubic metres of air. The question which may be raised in connection with these is this: how do pupils define the physical environment of school? This study tries to explore whether pupils come to say that a school environment is good because of the width of the corridors or main entrance, or whether other elements are involved. Perhaps it may help to understand the situation better if we know the feelings of users and their responses, as well as how the situation relates to aims of users and their responses. One further interesting point to raise is that definitions of the physical school environment also come from different educational theorists: i.e. philosophers of education (Plato, *The Republic* cited in Foxley, 1941; Dewey, 1916), managers of schools (Myers, Hill and White, 1959; Hutchinson and Young, 1962; Kay, 1990) and government (HMIO, 1936; DES, 1977, 1980, 1981, 1986; Elton Report, 1989). Therefore in terms of this thesis there is a point of connection between how pupils seem to behave, how their attitudes are formed and different ways in which the physical environment of school is related to school aims. This kind of interconnection will be the substance of later chapters.

But, as has already been noted at several points above, the different documents referred to each seem to describe only one or two elements of the physical school environment. Although the efforts made in those documents for the descriptions of the elements is appreciated, the focus on only one or two elements seriously undervalues the point that we are dealing with complex issues, when investigating the kind of life pupils receive from the school. Also, as has been stressed earlier, the physical school environment sets some of the parameters for teaching/learning and this is likely to affect social activities taking place there; and thus it encompasses a wide range of factors. Similarly, from the

many previous definitions, there are some main categories of the physical school environment, which I would expect to see. Therefore, for the purpose of this study, the phrase 'the physical school environment' refers to (described in the form of categories) the admirable state of buildings, appropriate design of the school buildings, appropriate heating/lighting conditions, appropriate quality of accommodation and space for all pupils, high standard of cleanliness/maintenance, appropriate grounds, surrounding school buildings, appropriate furniture conditions, sufficient supply of teaching/learning materials, high quality display of pupils' work and sufficient provision of sports requirements. It should also be noted that a number of elements exist in each of the above mentioned categories of the physical school environment, which will become apparent at later stages of this study. A particular point to stress here is that the physical school environment should operate according to the organisation and requirements of school aims.

THE SCHOOL AS AN ORGANISATION

This section of the chapter looks at the humanity inside the above described physical environment of school. It may be as well to focus on the term 'school' first. The term 'school' is used in a number of different ways in the field of education for young persons up to the age of 19 years. For the purposes of this study, the definition of 'school' is adopted from British educators (Peters, 1966; Gordon and Lawton, 1984) and Government documents on school education (Education Act, 1944; HMI, 1987; Elton Report, 1989; HMCIS, 1993): i.e. 'an institution providing education for young people up to the age of about 19 years'.

I now turn to give a brief account of the schools as organisations. An organisation is a deliberately created establishment set up for a certain purpose. Entwistle (1991) defines organisation as an establishment with its own rules and aims into which the people fit. Elton Report (1989), Entwistle (1991) and DFE (1993) speak of schools as organisations with specific aims. School set-up in this manner according to Wittrock (1986) and HMI (1987), among other factors include having buildings divided into separate rooms to serve

different purposes, rules which govern movement of pupils around the school/the use of corridors/communal spaces or the use of facilities. Wittrock (1986) and Entwistle (1991) have indicated that schools are likely to fail in achieving their aims if the accepted conditions change or are not provided. From this perspective, at least, the school physical environment is influenced by aims. So, before going any further, it may be as well to discuss aims of schools. What are school aims? In other words, what are schools for?

THE SCHOOL AIMS

The school aims indicate what the school intends to do for its pupils (Rowntree, 1981; Gordon and Lawton, 1984). From this definition, it may be argued: 'that the physical environment of school enables the school to achieve its aims'. In fact, when I raised the argument about addressing the school aims in the present study, many people asked me this question:

> "Why should anyone discuss school aims in a thesis on physical environment-behaviour relationships?"

As I have already noted above, the school aims influence the total way of life of the school. For example, Entwistle (1990) demonstrated that aims focused attention upon those processes or activities (as will be seen below) which are desirable, worthwhile, and necessary in school. In a more practical vein, Aristotle (cited in Hammond, 1902) informs us that nobody could possibly doubt the importance of aims of a given organisation such as the school when testing the functions of its system. Feuerback (quoted by Holly, 1978:p.1) put it this way:

> "He who has aims has a law over him; he does not merely guide himself; he is guided. An aim sets limits; but limits are the mentors of virtue."

Thus, although my study is concerned with relationships between the physical environment of school and pupil behaviour, it inevitably involves wider school matters. It is, therefore, my contention that research projects which have some bearing on school characteristics, or can be defined at school level, or the research project is investigating the kind of life pupils receive from the school, should not and cannot be isolated from

the school aims. The key question is: What characteristics of the physical school environment can have a positive or negative effect on the aims of school (in some ways a two way process)?

My expectation is that buildings/resource materials and their use are school life elements, embodying ideas and 'messages' which affect social activities taking place there. This is not to suggest that they provide a clear, unambiguous structure — they are open to interpretation and investigation – but they set some of the parameters for teaching and learning (the HMI findings discussed in chapter 5 are relevant here).

The existence of specialist school buildings supports the false but commonly accepted idea that school learning is divorced from other forms of learning which happen spontaneously and continuously elsewhere. Physically, schools help to set aside schooling from everyday life and perhaps, again erroneously, suggest that schools are exclusively about academic learning. School territory is marked by boundaries within which different rules apply. Schools are places where in some ways the public, including parents (other than at specific times, or by appointment) are often kept out, and teachers and pupils kept in — though out of school hours the latter's attendance may constitute a trespass (Entwistle, 1990). Some challenge to this isolation has come from the community school movement, in which the school becomes the arena for a whole range of activities and persons (see, for example, Fletcher and Thompson, 1980). Almost all schools contain classrooms, which are based on assumptions about the size of learning groups and the place/space required for learning activities. Special rooms reflect assumptions about the importance and role of particular subjects and their needs. In short, school characteristics have links with its physical environment and both have links with its aims. This being the background of the selected aims, I now return to the aims themselves and examine how it is defined by those concerned and/or responsible in this area.

The aims

Plato's *The Republic* (cited in Foxley, 1941) defines the four main aims of schooling as follows. Firstly, it should provide children with a sense of fitness; thereby enabling them

to cope with the ordinary affairs of later life. Secondly, it should train young people to conduct themselves properly in any society, and to treat all strangers, even dull or offensive strangers, with politeness. Thirdly, the child should learn how to practice self control, and somehow dominate his own vices. And fourthly, a child should leave school with 'a soul well-trained to understand any circumstances'. This implies not only introducing children to what is not known to them, but also provision for their well-being.

Peters (1970) probably sums up the issues of school aims by his statement:

> "Schools are institutions whose overriding aim should be that of education .... (which) involves the initiation of the young into a worthwhile form of life. This involves activities and forms of thoughts and awareness which are regarded as intrinsically valuable ... it involves modes of conduct that are moral justifiable ..... together with their political derivatives, i.e. behaviour associated with good citizenship, it involves manner, decency in dress and cleanliness, etc., which are part and parcel of an approved form of life. It also involves skills such as reading and writing which are necessary conditions for such a form of life."
>
> (p.252)

From the standpoint of these expressions, the school seems productive and associated with clearly stated aims of academic work. They also describe standards of dress, cleanliness and behaviour. The aims are presented in terms of positive behaviour with positive views of the school rather than avoiding negative ones. It should be noted that similar definitions are offered by the government (see HMI, 1987: p.4; Elton Report, 1989: p.24). The trouble is that, in these expressions, the school yearns for some ideal state, but this may remain theory only. In fact, by the late 1960s Power et al (1967) had carried out a study of delinquency rates in Tower Hamlet schools. They broadened the discussion of causes of this particular problem to include not only the child and his home, but also the school as a further possible contributory factor.

Recently, among the increasing number of researchers into this issue (the school influence on pupils' behaviour) McGuiness and Craggs (in Tattum, 1986) re-emphasise the earlier findings that problems of behaviour are partly set within the context of the school. They reveal schools to be failing in their aim of promoting good standards of behaviour. Thus, the school seems to be facing serious problems and in this complex climate, a number

of characteristics can be distinguished. Further, in this account of examining to what extent school aims are achieved, Reid (1978) argues that school aims should not only be seen with regard to pupils or teachers, but that they should also include:

> "Schools, their facilities and equipment, together with the educational systems in which they function."
>
> (p.30)

This quotation makes the position of the aims even more relevant as an essential part of this study. Reid (ibid) calls for understanding of the physical environment of school in the light of school aims. It may therefore be argued that the pupils are likely to become confused if the physical environment of the school fails to provide the conditions for attaining school aims, or if there is an absence of congruence between stated aims and the school's physical environment.

Environmental design in general

Design points out ways of living, and is a product geared to meet a specific purpose. As Dorner (1991) puts it, "design needs to please others, notably the user(s)", arguing that a professional designer may honour, for example, a building which the users may consider a disaster. One neat demonstration of designer-user conflict was provided by Milgram and Toch (1968). Their study focused on crowding behaviour in the lobby of the Brattle Theater in Cambridge, Massachusetts. After patrons purchased their tickets, they joined a queue in a narrow alcove just off the theatre entrance. As the line grew, it extended down one side of the alcove and doubled back to the starting point in a U. The alcove in the Lobby of the Brattle Theater was exceptionally narrow, however, and this configuration led to a continuous problem. The social formations tend to be somewhat loose, under the best of circumstances, so that when the crowd at the Brattle was large both legs of the U were in contact. Under these circumstances, when the doors were opened and the head of the line moved into the theatre they bumped and jostled the end of the line. This contact seemed to be all that was required to release the late arrivals from any obligation they felt to wait their turn. They promptly did an about face and

marched in with the head of the line. The people in the middle of the line had to scramble for whatever seats were left. It seems safe to assume that as the middle group entered the theatre, their hearts were filled with slanderous thoughts of their fellow men. All this stress and turmoil disappeared, however, when the alcove was widened. The line dutifully pursued its course around the U and harmony reigned. Clearly, the physical environment influences the behaviour of those occupying that environment.

Further evidence of the physical environment-behaviour effect can be found in Oscar Newman (1971). He deals with another type of behaviour that results from the details of building design. Newman, an architect, and director of the Institute of Planning and Housing at New York University directed a three year study to find out how the level of housing projects influences the level of criminal activity within the project. While most people usually think in terms of locks, alarms, and barricades as the only feasible means of protection against the threat of burglaries or muggings in the apartment house elevators, Newman's study suggests an entirely different line of defence. In comparing projects which had a high incidence of criminal activity with those which had a low incidence, Newman found that key difference appeared to be the territorial behaviour of the tenants. Where a small number of families shared a common entrance, and the units were so designed that it was possible for them to see what was happening in "their" mutually shared public space, a sense of territoriality developed that proved to be a surprisingly effective defence against criminal activity. Territorially-minded tenants reacted to the presence of suspicious strangers and felt no reluctance to call the police if some threat seemed to be developing. In the large project which Newman studied, as the extensive and impersonal corridors, lobbies, and stair shaft didn't "belong" to anyone, no one felt responsible for what took place in them. Under these circumstances, the public space could easily fall under the control of criminal elements. Reading Newman's account of what life is like in low-income high-rise apartments where this situation has developed is interesting. What is to be regretted is that such situations do not have to exist. As he notes in the comparison of two projects across the street from each other, the difference is mainly the result of the way they are designed:

> "The one hundred and fifty New York families trapped in apartments that open onto the double-loaded corridors of a seventeen-storey high-rise building — whose elevator, fire stairs and roof are freely roamed and ruled by criminals — find it hard to believe that the project across the street, composed of three to six-storey buildings in which two to three families share a hallway and six to twelve an entrance, actually accommodates people at the same density and could be built at the same cost. The families in the seventeen-storey building find it incomprehensible that both projects house families at equal densities and that the design differences between the two projects are predominantly the result of the whim of each designer ... it seems unforgivable that high-rise projects should have been designed to make their inhabitants vulnerable, when projects across the street were able to avoid these problems simply by not creating them in the first place."
>
> (in Deasy, 1974:p.4)

Newman's study seems to offer an example of how behaviour differs in different settings. The significance for school design is obvious. To be sure, it is the people, the criminals, who enact the behaviour, not the building, but one arrangement makes criminal activity easy while the other makes it difficult. There is one aspect of Newman's statement that is particularly telling for anyone in the field of planning and design — the chance that the designers of the high-rise project selected a seventeen-storey solution as a personal whim. "Whim" may be too derogatory a term to apply to that decision, but it does seem clear that the designers could not have had the faintest idea of the disastrous effect their decision would have on the tenants. Regardless of the other talents they brought to their architectural assignment, they obviously did not bring an understanding of environmental influence on human behaviour.

Charles Abrams (1965), a planner of great perception and wide experience has commented on this astonishing void in the design process. After interviewing the architect for the Cleveland Zoo, he concluded that no human animal ever received so much concerned attention as the zoo animals. Before a line was drawn on the plans, specialists from all over the world were consulted, not only on feeding and climatic tolerances, but on such crucial behaviour factors as social organisation, dominance patterns, territoriality, and mating habits. The logic of this course is evident. Regardless of how well the Zoo might perform in other ways, if it failed to provide an environment in which the animals could not only survive but could function in their natural way, it would have

to be judged a total failure. While human beings, to repeat, can clearly perform better in one design of environment than another, it seems, thus, that design has the possibility to increase desirable behaviour and the possibility to decrease undesirable behaviour, as noted specifically to the school design, a similar example will be quoted. Should we really pay more attention to the physical environment of animals in zoos than to the needs of children in schools.

BEHAVIOUR

This part of the chapter analyses behaviour as a concept, not only because this is a behavioural project, but also to help identify criterion for understanding of 'good' and 'disruptive' behaviour in school.

James (1890) defines the word 'behaviour' as any activity of a person or animal that can be observed and measured. Heimstra and McFarling (1974) wholeheartedly agree:

> "Broadly defined behaviour is any form of activity that is observable either directly or with the aid of instruments."
>
> (p.4)

Of course, such definitions or descriptions can promote useful discussions. Elaborate equipment can be used to observe some kinds of behaviour — electrical changes within the brain, for example. Various types of test can be used to detect mental and psychological processes. However, there is one point I want to make concerning this style of definition, which is that in the social sciences the concern is with human behaviour, including the internal and external aspects of not only what men/women do, but also do not do. For example, some pupils may voluntarily pick up rubbish on their school playground and put it in the garbage, while other pupils may notice rubbish and refuse to pick it up — these can seem all behavioural. Roth (1990:p.253) saw the role of thought as really inner speech, a form of behaviour ('talking to oneself'). Human behaviour is more complex than the initial definition suggests. As Watson (1924) puts it,

> "human behaviour is a mixture of the variety of human choices, enterprises, perceptions as well as the accidents of nature that impinge upon their activities for good or ill".

In the words of Skinner (1953):

> "Behaviour is a difficult subject matter, not because it is inaccessible, but because it is extremely complex. Since it is a process, rather than a thing, it cannot be easily held for observation. It is changing, fluid, and evanescent, and for this reason it makes great technical demands upon the ingenuity and energy of the scientist."
>
> (p.15)

As we shall see, because of the complex nature of the relationship of behaviour itself and between behaviour and the physical environment of school, the demands upon the ingenuity and energy of any engaged in the research programmes on this topic have been great indeed, even in those researches which were not based on systematic analysis.

Perhaps I need to narrow my focus a little, as I am not interested in the behaviour of every human being. My main interest is the behaviour of young people in the school. In addition, as we have seen (and shall see more), it should be stressed clearly from this opening section that behaviour measurement in the school is strictly based on the principle (Morrish, 1972), as mentioned above, that the school is a miniature society or an organisation with its own rules into which the pupils have to fit. The school also plays, as Steinberg (1980) emphasises, an important role in the wider society in that it plays a major part in socialising pupils, that is to say training them to behave in the ways deemed appropriate in their society, and instilling in them a sense of social cooperation or altruism (Awiria, 1991). In short, the school is an establishment associated with (Elton Report, 1989) predictable aims and one of the aims is pupils' training in appropriate behaviour. In this thesis, pupils activities and/or deliberate refusal to act in desired ways will be considered as behaviour.

Two main uses of the word "behaviour" may be distinguished in schools: a) good behaviour, and b) disruptive behaviour (Cohen and Cohen, 1987; Charlton, 1989). In the present study, I am going to say a little about both, each of these discussed in turn, as below.

GOOD BEHAVIOUR IN SCHOOL

Every society, suggests Nicolson (1955:p.10), must select for itself a type of behaviour, a model, an exemplar, of how the good member of that society ought to act. The HMI Report (1987) defines good behaviour in British secondary schools:

> "All pupils are expected to behave in a responsible manner both to themselves and others, showing consideration, courtesy and respect for other people at all times"
>
> (p.4)

Similar definition of good behaviour is offered by Galvin, Mercer and Costa (1990) that good behaviour means everyone in the school is:

- careful and kind;
- polite and friendly;
- helpful to each other;
- quiet and hardworking.

These definitions link with school aims in two ways: a) in terms of social and interpersonal behaviour and b) pupils doing the desired school work. It indicates what schools expect their pupils to do. According to HMI Report (1987), maintenance of good behaviour in school is not only to establish rules, but also ensure safety, personal welfare and provide effective conditions for teaching/learning. School discipline should support the conditions and schools should create attractive environments to give the pupil as much help as is necessary for him to accomplish the target behaviour. A similar argument is put forward by the Elton Report (1989), that the school plans for promoting good behaviour should include ensuring that the school's code of conduct and environment provide clear guidance reinforcing one another. That is, unless schools create a better environment, they cannot succeed fully in promoting good behaviour. Wheldall (1992) writes — 'if arrangements for encouraging good behaviour are not met, rebellious or anti-social behaviour is likely to define the situation'.

It is important to know the possibilities that can maintain and increase good behaviour ("desirable behaviour" or acceptable behaviour as some writers such as Smith and Laslett, 1993, call it).

> "Before a man can do that which is good, he must know what the good is; and if he knows the good, he must do it."
>
> (*The Republic* of Plato — translated by Boyd, 1904:p.67)

Research therefore recommends that children should be taught good behaviour at all schools (HMI, 1987; Elton Report, 1989; HMCIS, 1993). Interestingly, debate has settled itself into the unresolved concept of disruptive behaviour, which I now turn to define.

DEFINITION OF DISRUPTIVE BEHAVIOUR IN SCHOOL

The *Oxford Encyclopaedic English Dictionary* (1991) defines "disruption" as the action of rendering or bursting asunder; violent dissolution of continuity and it defines a 'disrupter' as one who "brings disorder". Such dictionary definitions employ the common usage of words — in situations which are usually so complex and variable that they never repeat exactly. Kaufmann (1989) believes that disruptive behaviour in school is the most difficult of all forms of behaviours to define. He states the reasons as:

- teachers identify different behaviours and different children as disruptive;
- some behaviours may constitute a disruption in one classroom context and not in another;
- the same student will behave differently with different teachers, some pupils are disruptive only with certain teachers;
- there is some ambiguity about who are disruptive; sometimes what is considered as disruptive behaviour may be pupils' reactions against difficult school environments;
- some young pupils only display behavioural problems at school or at home, but not both.

Indeed, these issues do make the definition of disruptive behaviour in school difficult. It is relative in the sense that our judgment of disruptive behaviour and good physical environment is related to our life. The broadest view of disruptive behaviour in school (DBS) is that it is not only the problem behaviour that a behavioural scientist defines or observes, but the whole school environment (both social and physical). Galloway and Goodwin (1979) argue that when trying to arrive at a definition of pupils' DBS, the issues of 'environmental circumstances' and teachers with whom the pupil lives/talks/works raised considerable debate among school behavioural researchers, the reason being that they define behaviour in different situations. To go a little further with this discussion, we might refer to the behaviour of a rat in a Skinner box (Davison and Neale, 1992), the behaviour of a client in therapy and the action of a child in a nursery school. The behaviour, accordingly, might be seen not only as originating within the person/animal, but also that behaviour occurs in a particular setting or environment and with respect to certain conditions of stimulation present in the environment (Kauffman, 1989). Furthermore, perhaps this environmentally influencial explanation is in line with the suggestion made by Wittrock (1986) that the relevant definition of behaviour characteristics is the one which serves the purpose of the social agent who uses them. That is, that the label "disruptive behaviour" should be used on pupils in relation to school aims, such as relating to teaching/learning situations or the school rules or physical/psychological well-being of other persons or school property, as the Elton Report (1989)says. DBS has been defined by a number of educational psychologists (shown below) as any behaviour by one or more pupils that is perceived by the teachers to initiate a vector of action that competes with, or threatens, the primary vector of action at a particular moment in a classroom activity. The phrase "vector" is used here to refer to a pupil whose behaviour is likely to be influential on others. Vectors perceived as disruptive behaviour are likely to be (or likely to become) public in school, that is, visible to a significant portion of the class and contagious, that is, capable of spreading rapidly or pulling other members of the class into them. For example, Lawrence, Steed and Young (1977) define disruptive behaviour as "behaviour which interferes seriously with

the teaching process and/or seriously upsets the normal running of the school". In a similar vein, the Pack Report (Scottish Education Department, 1977) writes of behaviour that thwarts the school in pursuit of its aims:

> "Indiscipline occurs when the authority of the school is defied, when the objectives of the school in respect of the education and welfare of the pupils in it are thwarted, or when offences are committed against persons or property in a situation in which the school is responsible."

The definition offered by Saunders (1979) is also worth quoting because it gives some indications of the sort of behaviour that are regarded as disruptive:

> "Disruptive behaviour is ... behaviour which slows down a pupil's educational progress, upsets the social skills of relating to others, and acts against his own best interest .... disrupts the smooth management of the class, consumes the teacher's time and energy, diverts the attention of the other pupils, and prevents the teacher achieving his objectives."
>
> (p.7)

Table 1 shows similar definitions. By these definitions, disruptive behaviour is behaviour which disrupts. Such definitions may be described as 'circular definitions', in that they do not attempt to construct a list of behaviours. However, they have an advantage that recognises the important role of the school context in judgment of what is deviant, and do not deny in such a judgment the relativity which was noted above. For the purpose of the present study, this definition needs to be taken a step further to include the actuality of the behaviours. In other words, if the attempt is to define behaviour, it seems essential to know items of those behaviours. The present study was also intended to give a picture of the relationships between pupils behaviour and the physical arrangements of school environment — thus suggesting knowledge of the behaviours which characterise the relationships within the school, and this is relevant to Lawson's (in Table 1) view that disruptive behaviour requires handling in many different ways.

Table 1. Definitions of disruptive behaviour offered by Lowenstein; Galloway, Ball, Bloomfield and Seyd; Tattum; Cohen and Cohen; Elton Report; Lawson.

Author	Year	Definition	Page
Lowenstein	1975	"This time violent and disruptive behaviour was defined as being more than the ordinary mischievous behaviour of pupils in the school or play-ground. Violent behaviour was defined as fairly vicious attacks on other pupils, the malicious destruction of property, and attacks by others or parents on members of the school staff (teachers and non teachers). Disruptive behaviour was defined as any behaviour short of physical violence which interferes with the teaching process and/or upset in the normal running of the school."	10
Galloway, Ball, Bloomfield and Seyd	1982	"... any behaviour which appears problematic, inappropriate and disturbing to the teacher."	2
Tattum	1982	"Disruptive behaviour is rule-breaking behaviour in the form of conscious action or inaction which brings about an interruption or curtailment of a classroom or school activity and damage interpersonal relationships."	45
Cohen and Cohen	1987	"Disruptive is not behaviour but behaviour in context."	2
Elton Report	1989	"... behaviour which causes concern to teachers."	102
Lawson	1991	"Situations in which pupils consistently refuse to cooperate with staff and/or demonstrate behaviour which shows no respect for others or for themselves, usually require handling in a different way."	16

Further, on taking a close look at elements in Table 1, three definitions may be drawn: That is, that disruptive behaviour in school is seen as being behaviour of pupils which a) interferes with the teaching process, much to the frustration and annoyance of the teacher; b) has a detrimental effect on behaviour development and interferes with other pupils' life or damages property in a situation in which the school is responsible and/or c) threatens the established order by challenging the authority of the school.

Also in the behaviour management perspective, definitions of disruptive incidents show a working consensus. This view is supported by HMI (1987) and the Elton Report (1989) and the HMCIS (1992) who suggest that a useful way of defining disruptive behaviour

is to demonstrate items of the disruptive incidents (thus creating a definition that is supported by evidence). Thus, Davie et al (1972), in their project of the National Child Development Study (the National Child Development Study was a national survey) investigated all children born between 3 and 9 March 1958. Each child's teacher was asked to complete an early version of Stott's Bristol Social Adjustment Guide (the Guide contains some 250 descriptions of elements of behaviour); in this, the teacher is given a large number of statements about children's behaviour and asked to underline the ones which describe the child in question most accurately. The items which indicate the same degree of disruptive or deviant behaviour underlined were:

- absence from school (i.e. disrupts the pupils' education);
- unhappiness;
- poor performance in academic work;
- restlessness;
- smoking;
- unco-operativeness;
- thumb-sucking;
- finger-sucking;
- nail-biting;
- rough play (aggressive in play with others);
- withdrawal;
- depression;
- hostility towards teachers by pupils.

It should be noted that the children were aged seven years or below nine years. Also depression is not only disruptive behaviour — but it is also personal suffering in some

ways due to environmental inconsistency; some schools may be situated in problem areas which generate such behaviours.

Borg and Falzon (1990) also study DBS. They surveyed the teachers' perception of the disruptive behaviour of primary school children on the island of Malta. They based their analysis on the assumption that, because teachers in schools have the task of integrating the next generation into society, teachers represent and transmit cultural norms — in this context, teachers' perceptions of deviant or non deviant behaviour of students are important and significant. The survey covered 844 primary teachers, both long-term and less experienced. There were 610 female and 234 male teachers. Borg and Falzon's research listed 16 items of 'undesirable behaviour' as described by the teachers: untidy in personal appearance; lying; easily discouraged; weepy; disobedient; talkative; attention-seeking; fearful/easily frightened; suspicious; cruelty/bullying; shyness; stealing; careless/untidy in work performance; rudeness/impoliteness; unhappy/depressed and restlessness. The items are useful in providing evidence of DB, but interestingly the researchers do not report the causal factors. By the term 'causal factors', I mean the situations that trigger behaviour. Therefore I will look at another study.

In the case of secondary school age pupils, Glynn, Merrett and Houghton (1991) use the term "troublesome behaviour" as their main example when they are explaining behavioural problems in schools. Glynn, Merrett and Houghton wished to obtain information regarding the use of "correspondence training" for reducing the level of troublesome behaviour in secondary school age pupils (Glynn et al, 1991: p.273, define "correspondence training" as follows: 'Disruptive pupils are encouraged to describe their own behaviour; and then say what they should and should not do; and when pupils change their behaviour from troublesome to good, they are rewarded'). In the course of their investigation, they interviewed the secondary school teachers of the West Midlands (UK) to obtain their views of the kinds of behaviours that were causing trouble. The result is not detailed, but it provides a picture of the behaviour problems identified by the teachers.

Three views of behaviour problems grouped by Glynn, Merrett and Houghton were as summarised in Table 2 below:

Table 2. The three views of behaviour problems offered by Glynn, Merrett and Houghton.

Category of Behaviour	Characteristics of Behaviour
1. Talking out of turn	shouting across the classroom
	calling out to the teacher
	answering questions without first engaging the teacher's attention
2. Hindering other children	talking to other pupils to prevent them getting on with their work
	aggressiveness by poking, pushing or striking other pupils
	interfering with the apparatus which other pupils are using by moving their equipments or books, or scribbling or defacing the paper they are trying to write on or books they are trying to read
3. Homework	not doing or completing home work

Glynn, Merrett and Houghton (1991) stress that these were the behaviours which are seen by teachers to be troublesome (p.277). I do not want to deny that these constitute some of the behaviour problems in secondary schools. What may perhaps be said in the case of pupils not doing or completing home work is that some children come from discouraging family environments (e.g. heating or lighting conditions may cause difficulties or there may be the problem of overcrowding in the family), which actually prevent the work from being done.

It may be as well to examine further the phrase "troublesome behaviour". To what extent is "troublesome behaviour" the same as disruptive behaviour? An answer is, as Cohen and Cohen (1987) suggest, not simply that the pupil displays a disruptive mannerism, but also it means the pupil is troubled. In other words, troublesome pupils are troubled. Cohen and Cohen (ibid) emphasise that pupils' troublesome behaviour may be defined in terms of disruptive behaviour because it may also prevent the teacher from giving equal attention to every pupil in the classroom and interferes with other pupils' lives. The reciprocal effect of the troubled pupils being troublesome in terms of their behaviour is examined by Hoghughi (1983). Hoghughi, further, focuses on teachers and the educational system, viewing them as formal agents of social control, predominantly concerned with preserving certain standards, enhancing pupils' potential towards

achievement and curbing of yet other forms of behaviour, thought and feeling which are deemed disruptive (p.127). Hoghughi examines the evidence which points to the influence of the school in facilitating or impeding disruptive behaviour tracing as well as the complexity of influences which the pupil brings with him/her to school. A central argument that Hoghughi develops here is that, although teachers demonstrate ability to identify and predict troublesome behaviour, they seem to do little to either enable the parents to do a better job or, indeed, to take over most of the job of the wider upbringing of the child and adopt their educational methods to the needs of such pupils. Apart from school, Hoghughi blames parents for the troublesome behaviour of pupils. His point is that pupils with poor parental background make demands on the time, patience and competence of teachers which cannot be met adequately. Hoghughi charts the progress of the badly behaved pupil through the primary school years. She/he will probably be retarded scholastically in the basic subjects despite some varied attempts at remedial help and will be socially inert with a reputation for troublesome and wayward behaviour, cheekiness or bullying. Thus, Hoghughi affirms, the pupil's difficulties become part of the aura he bears, rather than reflecting on only the inadequacies of the school. Hoghughi identifies how the pupil's problems are compounded by the secondary school environment: larger, more formal and impersonal, less homely and helpful, more alienating and easier to get lost in, demanding much greater self-direction. To relate this to the present thesis it seems that not only does the physical environment of school influence pupils' behaviour, but the pupils also have an influence on the environment. The rationale behind this focus is that understanding behaviour in many different ways carries some sense of responsibility for dealing with pupils' behaviour which are influential upon the school physical environment.

Following the same line of argument, Gladstone's (1979, p.23) study demonstrates that behaviours such as pupils scratching desks, breaking windows, breaking furniture, graffiti, throwing cans and wash basin breaking are considered disruptive behaviour. Gladstone's findings can seem useful because they extend the definition of DBS to include

how pupils interact with the physical environment of the school. On the other side, Watkins and Wagner (1987) writes:

> "It may not only be so much that the pupils have disruptive behaviour as that the school have retarded physical setting conditions"
>
> (p.65. For the same quote see also Hallas, Fraser and MacGillivray, 1978:p.5; Spencer et al, 1989:p.232)

All the work reviewed here had the common aim of securing information so that the definition of DBS can be soundly based. The discussion makes several points, particularly the specifications that:

a) school administrative definitions vary so much that a student might be classified as disruptive in one situation but not in another (Robertson, 1981), and this depends sometimes on circumstances of the school's socio-physical environment (Elton Report, 1989);

b) children with behaviour problems need help primarily because they exhibit behavioural excesses — not to define precisely and to measure these behavioural excesses and psycho-deficiencies, then, is a fundamental error (HMI, 1987; Elton Report, 1989; HMCIS, 1993);

c) in defining disruptive behaviour in school it is essential to consider that the behaviour is not a thing that exists outside there, but a label assigned according to norms, rules of the school culture (Tattum, 1982; Cohen and Cohen, 1987);

d) pupils' disruptive behaviour in school destroys the continuity of a lesson, much to the annoyance of the teacher (Galloway et al, 1982);

e) it (DBS of pupils) has a detrimental effect on behaviour development and adjustment and interferes with other people's life or damages property in a situation in which the school is responsible (Lowenstein, 1975); and/or

f) threatens the established order by challenging the authority of the school (Lawson, 1991).

It should also be noted that the present study regards that a chaotic physical environment in a school has a close relationship with (as we shall see) behavioural problems, thus, definitions of DBS should, but in part, take into account the school physical environment conditions.

SOME CONCLUSIONS REGARDING TERMINOLOGY

Despite my attempt to establish a clear definition of DBS, a significant difficulty in the definition of DBS is that a number of different terms such as aggressive behaviour, bad behaviour, indiscipline, antisocial behaviour, unacceptable behaviour, delinquency, problem behaviour, inappropriate behaviour, socially deviant behaviour, unwanted behaviour, undesired behaviour, vandalism or violence have been brought into use. However the behaviours regarded by psychologists as being a threat or dangerous to the community life and health, as well as to self (Elton Report, 1989; Holman and Coghill, 1989; Howells and Hollin, 1989; Galvin, Mercer and Costa, 1990; Wheldall, 1992) seem common characteristics of these terms or labels. However, my argument is whether it is possible to use all of the terms interchangeably as claimed by Kauffman (1989):

> "We use the terms emotionally disturbed (or simply disturbed) and behaviourally disordered interchangeably ..., many additional terms refer to the same population."
>
> (p.4)

The argument is, some authors have pointed out, that there are differences between these labels in their incidences and the extent of their use. For example, Moore and Arthur (1983) define the term delinquency by the extent to which someone who is not legally adult (probably an adolescent) violates the law. While Kazdin (1985) defines antisocial behaviour in view of a persistent pattern of behaviour of a child which significantly impairs everyday functioning, not only at school but also at home that leads others to conclude that the youngster is unmanageable. Moreover, Stone (1990) associates

aggressive behaviour with acts such as biting, hitting or scratching others or kicking. The point is that the terminology of the field is confused inevitably — representing the complexity of the phenomena — sometimes it seems as if it is the pupils to whom the labels are applied. Terms for behaviour which damage relationships/smooth running of school, as Stone (1990) suggests should be used for specialisation or concentration.

In Britain, HMCIS (1992) has documented how behaviours in school are to be judged:

> "Behaviours ... are to be judged by the extent to which the attitudes and actions of pupils contribute to or restrict effective learning in the classroom and to the quality of life and function of the school as an orderly community."
>
> (p.7)

Thus, behaviour management perspective in British school require a label which not only should improve the child's behaviour (if the label correctly defines the behaviour, the label may be used as a guide for treatment to improve the behaviour), but also repair breakdowns of the classroom order/smooth running of a school. It was on this basis that the term 'disruptive behaviour' is suggested and used in the present study, to incorporate all forms of behaviours regarded wrong in school. Firstly, for the fact that disruptive behaviour (DB) seems to be a less medical label than say psychopathic, though psychopathic behaviour is also disruptive in a school situation (Feldman, Kinnison, Jay and Harth, 1983). Secondly, Disruptive behaviour is the term preferred by many professionals (Lawrence, Steed and Young, 1977, 1981a, 1981b, 1986; Galloway, 1982; Tattum, 1982, 1986; Topping, 1983) in the field of behaviour management in school.

Thus, for the purpose of this thesis the term 'disruptive behaviour' will be used. This term seems to link fairly well with acts which damage relations and/or restructs effectiveness of the school in achieving its aims. For example, a child continually talking, a pupil staring out of the window and waving to others, a chair flying across the room, or a teacher reporting late for a lesson/to school. Also the phrase disruption implies a context and an activity - one always disrupts something and the use of the term implies a frustration of the intention of one partner in the interaction. Its value as a term lies precisely in that it gives access to understanding the underlying and implicit norms and

values which are inherent in situation. To ask about disruption is to explore different notions of considering order and regularity. In schools, the term is often associated with the teacher's power to assert the legitimacy of his preferred method of keeping order. In general terms, disruption in school is behaviour out of place; the conditions for identifying it are a set of ordered relations and a contravention of that order. So, as we can see, the term can be used to explore relations in school at a great depth. But, one point needs to be made clear: that is, behaviour is not disruptive per se, there are times when teachers positively encourage children to be talkative or boisterous, or extrovert - as already noted above makes the definition of the term complex. Behaviour only becomes disruptive at certain times and in certain places; therefore the use of the term disruptive is then seen here to associate the behaviour in question with the immediate activity. Also, the term 'disruptive behaviour' has a direct link with this thesis - that is, most of the literature which is concerned with the physical environment of school (Coffield, 1991) has looked at damage to the physical environment such as graffiti, window breaking or littering; and that is why this thesis considers that there is a link between pupils' behaviour and the physical school environment. Further, consideration of the term disruptive relates to the fact that if, say, a pupil was suffering from depression, the depression would disrupt the learning of the pupil. It may as well be noted that this study concentrates more on disruptive behaviour because most of the literature on behaviour in school is about disruptive behaviour.

Finally, although in the literature (HMI, 1987; Elton Report, 1989; Charlton and David, 1993; HMCIS, 1993) concerning children's behaviour – children, pupils, students are terms that are often used almost interchangeably. In this thesis I am going to use the word pupil, for the reason that in this kind of discussion about child development, the word pupil is usually connected with the description of children in school. Child might be a child in a church building, child on a street, child in a family or child in the market place; but what I want to say is that I am going to use the word pupil because the term carries a necessary connection between the environment of school and the child within it.

SCHOOL TEACHERS

Later in this study I survey the views of teachers about the characteristics of the physical school environment, the relationship between the physical environment of school and pupils' behaviour, and the research. So, in this particular section of the study, I briefly discuss the rationale behind the involvement of teachers.

School teachers are seen as part of the school, authority figures over pupils' behaviour; and information from them about discipline issues is seen as making a contribution to the development of techniques for behaviour management in school. For example, the Elton Report (1989) recognises that the teacher as part of the school can identify the possible school environment characteristics which contributes to either good or disruptive pupils' behaviour without much difficulty. Robertson (1981) had this to say about teachers' perception of pupils' behaviour:

> "If you want to know what pupils behaviours are appropriate, ask a teacher."
>
> (p.51)

Tattum (1986) argues powerfully for the view that the teacher as an authority figure can be trusted to provide more accurate information on pupils' behaviour and that it is the judgment of the teacher which determines what is or is not defined as unacceptable behaviour or conduct, as Docking (1987) revealed in his extensive review on discipline in schools. Similarly, Taylor (1981) acknowledges that judgment by teachers' report is general. More recently, HMCIS (1993) emphasise that to develop any effective technique for keeping order in school, the perceptions teachers have of pupils' conduct are as important as firm guidance and that the techniques developed without reference to teachers' perceptions can be difficult to enforce in the real school/classroom situation.

The above review leads to two important conclusions. First, that information obtained from teachers are an important factor in coming to a better understanding of pupils' behaviour: That is, because it is assumed that data from them are based on direct experience. Second, that it is the judgment of teachers which determines what is or is

not defined as disruptive pupils' behaviour/school environment; the reason being that they are in charge.

Hence, the intention of the involvement of the teachers in the present study is that they may provide a more clear view of the proposed relationship between the physical environment of school and pupils' behaviour. Further, it is expected that the data could also show teachers' own feelings about the physical school environment. In addition, as teachers are significant in management of pupils' behaviour, it is therefore important to collect their views on the influence of the physical school environment on pupil behaviour.

SUMMARY

In this chapter I have looked at the design of the physical environment with the idea that the environment must be designed for people, to meet their needs and to satisfy their purpose. This then permitted me to look at design application in school. The emphasis has been on how design of the physical environment of school fits the functions. I also look at school as an organisation which have aims to achieve. By looking at school aims, the point in it is that the physical school environment may have an influence on school aims; and the work reviewed show pupil behaviour development as one of the aims. I then examined behaviour and some of the ways in which pupils come to be regarded as displaying disruptive behaviour, with a particular emphasis on differences of teachers' perception (see Appendix 1). Although I may seem to be somewhat critical in suggesting teachers' resistance to school educational aims (contradictions about the disruptive behaviour definition), I am not arguing against the positive contributions that teachers can make to progress in the day to day management of pupils' behaviour. Apart from teachers' perceptions of pupils' disruptive behaviour, I discussed the position of teachers in school from the perspective of authority, the point in it is that they may have feelings about characteristics of the physical school environment and knowledge about how it relates to pupils' behaviour.

The significance of this discussion of definition in this thesis is as follows:

1. It derives from literature.

2. The terms defined can be used to understand the relevant issues in great depth.

This discussion of definition relates to the next chapter in the sense that having looked at terms, having noted that it is difficult to find an agreed definition of some of the terms such as disruptive behaviour, and having proposed the working definitions for this thesis, we can now use the language to explore the philosophical ideas regarding the proposed connection between the physical environment of school and pupils' behaviour.

CHAPTER 3

CONSIDERATION OF RELEVANT APPROACHES TO UNDERSTANDING BEHAVIOUR

INTRODUCTION

This chapter continues the argument that an attempt should be made to understand how pupils' behaviour may be influenced by the physical environment of the school itself, by considering concepts relevant to the thesis, reviewing and analysing relevant theoretical perspectives and research.

IMPROVING PUPILS BEHAVIOUR THROUGH IMPROVING THE PHYSICAL ENVIRONMENT OF SCHOOLS: ESTABLISHING THE CASE

It is asserted that setting a satisfactory environment at school for development of the pupils' appropriate behaviour and progressive teaching and learning is a challenging task (Barrow and Milburn, 1986: pp.198-199). There are several fundamental 'psycho-environmental' reasons why it is necessary to examine how the physical environment might contribute to disruptive behaviour in schools.

1. The Physical Environment and Behaviour Relationships

Many psychologists have written about the role of the environment in shaping behaviour. Rosenberg (1967), for instance, notes that the:

> "Human nature is a reciprocity between organism and environment. It can be expected that it is possible for an environment to have a therapeutic effect on people who are disturbed, frustrated and hostile."
>
> (p.412)

What Rosenberg notes agrees with that stated by Skinner (1974; 1975):

> "Environment makes great contribution during ... the lifetime of the individual, and the ... effect is the behaviour we observe at any given time."
>
> (Skinner, 1974: p.17)

"... the problems we face are not ... in men and women but in the world in which they live."

(Skinner, 1975: p.49)

Similarly, Proshansky, Ittelson and Rivlin (1976) have said that:

"... environment affects behaviour."

(p.35)

The argument is that when behavioural psychologists have considered environment as the major determinant of human behaviour, they have generally done so in non specific terms, with the concept of environment used to refer to the most diverse set of conditions of experience, ranging from attendance in nursery school to socialisation practices of parents; from the provision for practice or training on a task to the role of culture or society in a global sense (Spencer, Blades and Morsley, 1989). Although behavioural psychologists recognise that social or interpersonal factors are important determinants of behaviour (Baron et al, 1991), they also recognise that the physical environment influences behaviour. To quote Heimstra and McFarling on this:

"Behaviour occurs in a particular environment context. This context imposes major restrictions on the kinds of behaviour that can occur in it and frequently serves to determine patterns of an individual's behaviour."

(p.6)

Similarly, Spencer, Blades and Morsley (1989: p.3) have said that the physical environment is not simply a neutral background for social interactions and individual development, but has a profound influence in suggesting, shaping, facilitating, and sometimes preventing behaviour. The physical environment is part of everyday life. Recently, Baron et al (1991), also, have said that the term "environment" is used by the behavioural psychiatrist to refer to the relationship between human behaviour and the sociophysical environment; and that the environment has both social and physical characteristics (ibid: p.568).

It is, therefore, important to point out here that the idea that the physical environment is linked with behaviour is not new. What is surprising and interesting to me, is the absence

of a detailed analysis (Rutter et al, 1979; Elton Report, 1989), or even total neglect, of the physical environment in analyses of disruptive behaviour in school.

2. Environmental Psychology

Before I move on to discuss the meaning of environmental psychology, it should be pointed out that there are several universities (not only in the UK – the University of Surrey; but City University of New York – in the United States; Strasburg – in France; and Lund – in Sweden) that have established courses of study in the physical environment-behaviour field (Altman, 1975; Levy-Leboyer, 1982). Further, International Conferences for Architects and Psychologists have been held every year under the programme of EDRA (Environmental Design Research Association), the proceedings of which are published and attendance has exhibited a steady growth (Preise, 1973).

On the objectives of environment psychology, a number of authors (Proshansky, Ittelson and Rivlin, 1974; Heimstra and McFarling, 1974; Altman, 1975; Canter and Craik, 1981; Canter, 1985; Spencer, Blades and Morsley, 1989; Bell, Fisher, Baum and Green, 1990) take the view that the field of physical environment and behaviour was brought into being to report rigorous experimental and theoretical work focusing on human behaviour at the individual, group and institutional levels. Concerns are explored in the following areas:

- Theoretical work on human environment and human behavioural systems and the interrelationship of human behaviour and physical environment. Attention is given to substantive concerns such as buildings, or the arrangements of desks in offices (Bell et al, 1990).

- Reports on research relating to evaluation and assessment of the effectiveness of physical environment designed to accomplish specific objectives (e.g. studies of the social effects of different kinds of living accommodation, of the effectiveness of

treatment areas in hospital, and of objects and spaces designed for teaching or communication) (Moos and Insel, 1974; Proshansky et al, 1976; Spencer et al, 1989).

- Studies relating to belief, meaning, values, and attitudes of individuals or groups concerning physical environment provision (e.g. investigation of the meaning and value attached to neighbourhood and recreational areas) (Baron et al, 1991).
- Physical environment whose human mission is not among the most salient characteristics and physical environment whose human mission is largely implicit and/or socially underdeveloped (Bell et al, 1990).
- Aims concerning control of physical environment and behaviour. In this connection attention is directed towards the utilisation and maintenance of the physical environment condition by those who use or manage them (Altman, 1975; Heimstra and McFarling, 1978; Spencer et al, 1989).

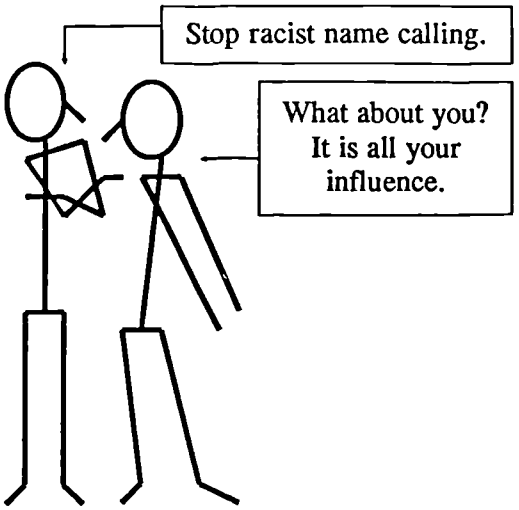
The concept of "environmental psychology" would encourage a study of the relationship between the school physical environment- pupils' behaviour. That is because the word "environmental" has, as mentioned earlier, connections with a diverse set of characteristics, such as geographical location, architectural design, natural resources, changing climatic conditions, pollution of air/water, hospital waste washing up on beaches, home relations, peer group attachments, work place (offices, classrooms, schools), neighbourhood, or whole communities (Skinner, 1974; Elton Report, 1989; Bell et al, 1990). Indeed, in many establishments, what Gump (1980) calls the basic welding of physical and social aspects is questioned. The practice of referring to the physical environment and the social environment is seen as representing a deficiency in conceptualisation in social science. Gump's claim is that the word "environment" remains shared between the two dimensions in terms of their basic concepts: physical environment and social environment (see Box 1). Stokols and Altman (1989) actually define "environment psychology" as "the study of human behaviour and well-being in relation to the socio-physical environment" (ibid: p.1). A similar definition has been offered by

Baron and Graziano (1991: pp.568, 610). In so far as the word "psychology" is concerned – Lindgren (1969) defines it as that concept which is concerned directly or indirectly with the behaviour of the individual organism.

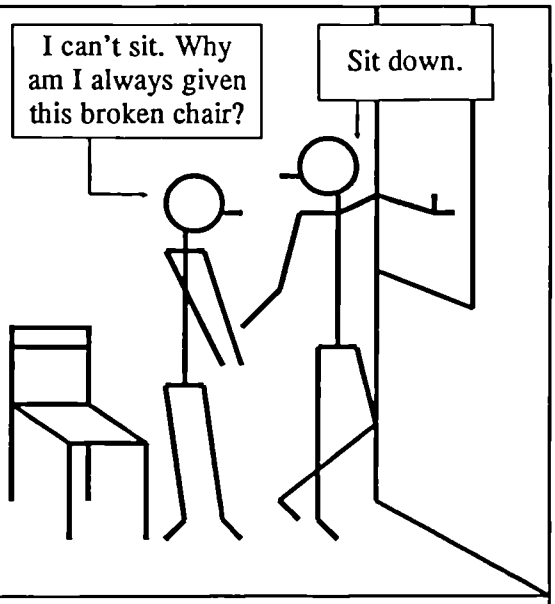
These definitions provide a general idea of what environmental psychology is, but are so general that they could conceivably include many other areas of psychology. For example, conceptualising the field as the study of the relationships between environment and behaviour suggests that learning, perception, and sensation (to name but a few possibilities) are a focal point of the field. To be sure, these areas of psychology describe relationships between environment and behavioural variables. This definition is not, however, central to what is meant by the term environmental psychology. The argument is that such definitions do not emphasise the bidirectional nature of environment-behaviour relationships. Environment, as Spencer et al (1989) put it, affects behaviour and behaviour affects environment. From this perspective, environmental psychology may then be defined as the study of the interrelationship between behaviour and experience and sociophysical environment. Three notions of environmental psychology are described in this definition: 1) physical; 2) social environment; and 3) individual – innate or psyche, that which may affect the environment (see Figures A1, A2) – meaning that behaviour variables are neither exclusively individual (innate or psyche) nor exclusively a consequence of modelling the observed behaviour of the respected other (social) nor exclusively a consequence of material settings (physical environment), but are linked or interactive (psychosociophysical). This indicates, broadly, the field of environmental psychology. It now remains to separate the discipline concerned with relationships between behaviour and the physical environments from the general, specifically enough for systematic analysis. It should be noted here that no one has yet attempted to offer a specific term for the physical environment-behaviour relationship field.

Thus, I propose to use the phrase physical environment psychology (in some ways physico-environmental psychology) in order to emphasise the distinction between the

Box 1: Social/physical environment-human behaviour relations in practical terms



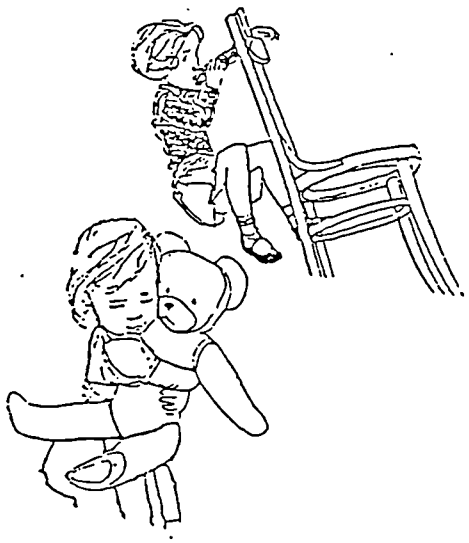
External social environment
(Which has received a great deal of attention in the field of research into behaviour management in school).



External physical environment
(which has been virtually ignored in the field of research into behaviour management in school).



Person to person(s) conduct.



A person or persons' conduct with physical things.

Figure A1:

The three elements in interaction (psychosociophysical)

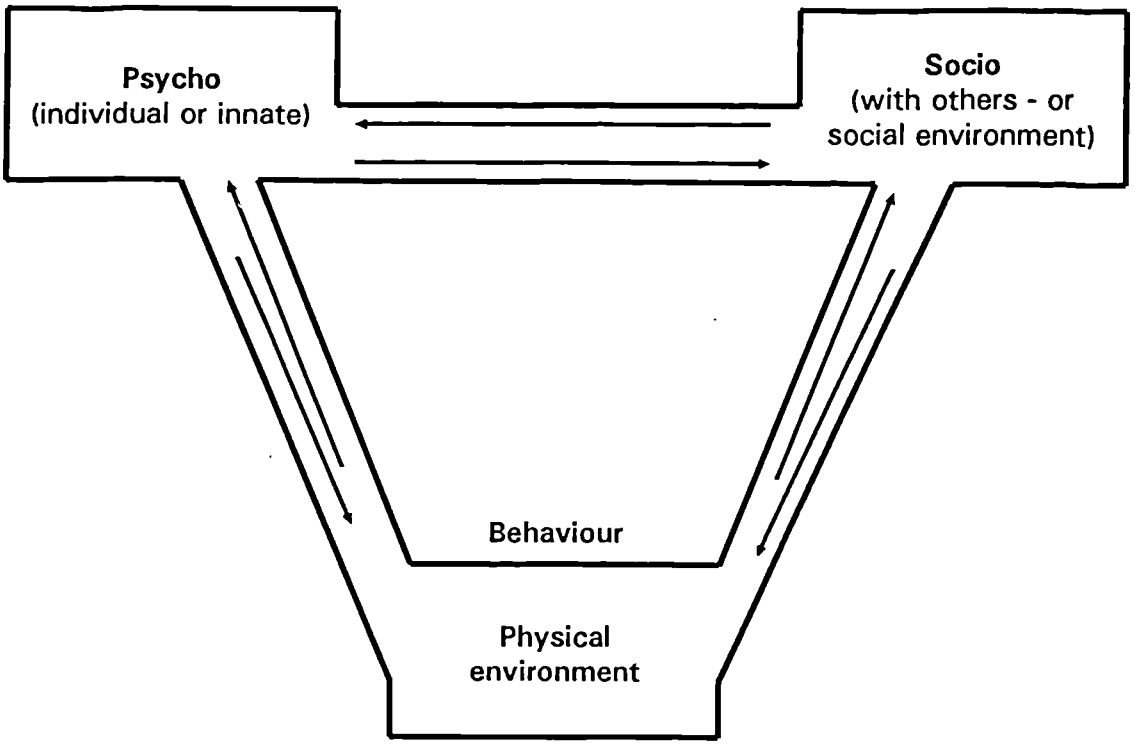


Figure A1 – Note

Source:

a) Psycho – Eysenck (1975) publishes The Inequality of Man, describing the theory of introversion/extroversion. According to Eysenck, personality differences have a genetic origin – behaviour exists in part as a natural entity.

b) Socio – Docking (1987) reviews many social learning theories and research on behaviour in school. He then states that peers, parents-child, pupil-teacher, friends and individuals in the same community can influence behaviour in another; and he associated this with social interaction.

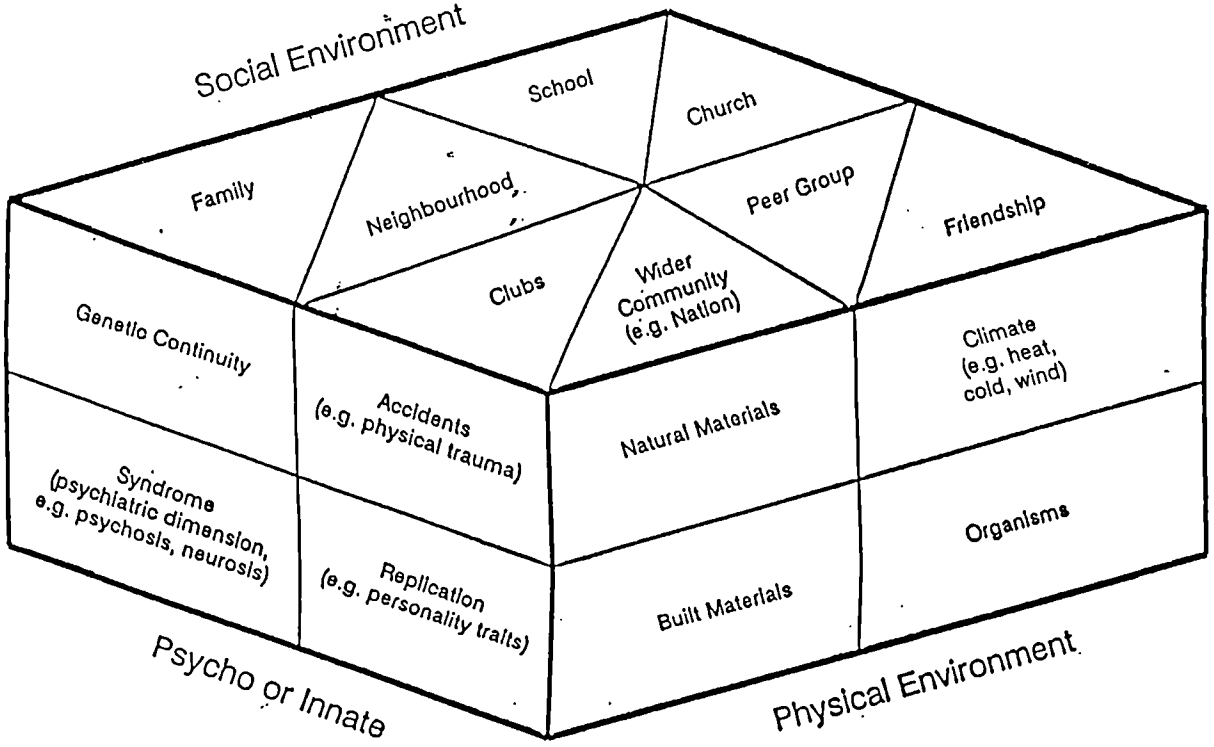
c) Physical environment – Stokols and Altman (1987) published the Handbook of Environment Psychology. This book provides extensive coverage of the major research areas within the field of environmental psychology; and then it specifically highlights research developments on the relationship between physical environment and behaviour.

Explanation:

The above diagram is an attempt to give a combined and operational interrelationship between the three elements. This interconnectiveness is by no means exhaustive but simply reflects the complex perspective of behaviour.

Foremost, for my purposes, is an emphasis on studying physical environment-behaviour links, drawn from the complex, as a neglected area in managing behaviour in secondary schools.

Fig. A2: The complex influence on human behaviour



Note: Although many different things are influences upon behaviour, this can still be assembled into three main groups (elements): 1) the physical environment; 2) the social environment; and 3) psycho or innate. It also has to be said that this diagram is an example representing a structure of "psycho-socio-physical" dimension which can serve as a guide to an understanding of human behaviours.

Note: The following list of references refer to Figure A2.

Family – Bowbly (1966) published his book entitled *Maternal Care and Mental Health.* Some further information on the subject of family influence on pupils' behaviour can be found in the work of Docking (1987) who gave a valuable survey of the psychological literature which goes back to 1951.

School – Rutter et al's (1979) research and the Elton Report (1989) show that irrespective of pupils' home backgrounds, schools themselves may sometimes be a key factor in determining whether or not certain pupils become disruptive. **Peer Group** – According to Lawrence et al (1984) pupils who identify strongly with their peer group may become difficult in terms of establishing satisfactory links with the institutional aims of the school. As in Bird's (1980) report of a group of difficult fifth-year girls: they had become a close-knit group through a common rejection of the norms of the school.

Friendship – Docking (1987) argues that some pupils do agree to behave in the same way; and also that some pupils can be backed by their friends to act in a particular way.

Church – Entwistle (1990) advocates that church is a very strong social institution and that it may be influential on behaviour of those who enjoy attending it.

Clubs – According to Altman (1975), clubs such as of football, may tie into members' behaviour.

Wider Community – Reviewing psychological research, Docking (1987), for instance, attributed violence or aggressiveness to overcrowding, more especially in inner city areas. According to Docking, when individuals have insufficient space and cannot escape, their frustration easily turns to violence. Bandura (1977) also states that children learn behaviour from other adults.

Neighbourhood – Reviewing literature on neighbourhood influence, Bell et al (1992) for example states that low crime neighbourhoods had fewer people on the streets than those with high crime. This seems to suggest that a neighbourhood with a strong social network may influence each other's behaviour.

Genetic Continuity – Eysenck (1975) popularised the genetic approach to behaviour. According to Eysenck, human behaviour is in part genetically determined. He argues, for instance, that introversion is produced by high arousal level in the cortex of the brain and that arousal helps a person to learn and form conditioned responses.

Syndrome – In a study of thirty-three pupils labelled seriously disruptive, Stott (1966) found that in twenty-six cases, there were symptoms of somatic0neural impairment, such as epilepsy, squint, defective speech or enuresis.

Accidents – Stone (1991) states that serious physical disability may lead some people to behave in ways considered disruptive in a society..

Replication – According to Rutter et al (1979), personality traits may have a link with behaviour. They reported evidence to show that adverse temperamental features, such as the low malleability or negative mood, are more likely to bring on parental criticism and thus help to foster family discord; conversely, a child's temperamental features can help to protect him from disharmony at home.

Natural Materials – Heimstra and McFarling (1978) argue that some recreational behaviour is related to the natural environment, and they give the examples of gardening, hunting, fishing, swimming, enjoying a walk through a forest, or walking along the sea-side.

Built Materials – Russell and Russell (1979) draw an analogy between animals such as chimpanzees, which are known to be peaceful in the wild but become aggressive in zoos, and human beings who live in high density stress-inducing inner-city environments. He concluded that when individuals have insufficient space/cannot escape, their frustrations easily turns to violence. Heimstra and McFarling (1978) reviewed extensively on furnishing arrangements in the classroom, and suggest that the physical characteristics of a classroom are an important determinant of some of the behaviour occurring there.

Climate – Following the recommendations by the HMI Report (1987) and Elton Report (1989), weather conditions which are too warm or too cold may make pupils feel bored or restless – the pupils would not want to be in the place and that there are more opportunities for disruptive behaviour.

Organisms – Seamon and Kenrick (1992), and Bell et al (1992), argue that if behaviour can be viewed partly as the result of an interaction between the person, his/her environment and his/her interpretation of events, then organisms (such as dogs, cats) within a person's environment are part of this interactionist perspective.

effect of social and physical environments. Thus, it is clear that it is specifically concerned with physical environment-behaviour relationships.

3. The idea of a whole-school approach to behaviour

More crucial than either of the questions so far discussed, however, is that of the "whole-school approaches" used in analysis of behaviour. This concept has been brought into use here, like the others above, to trace the reasons that allow a study of the relationship between the physical environment of school and pupils' behaviour. The assertion behind the idea of a whole-school approach to behaviour is that the school itself might be contributing to disruptive behaviour in pupils it so labelled (McGuiness and Craggs: in Tattum, 1986; p.13). There must be adequate information about the school's effectiveness. As Kauffman (1989) puts it "eliminating possible school contribution to misconduct" would reduce the problem and confirm the accuracy of the schools labelling a student as disruptive (ibid, p.182). The possible solution is seen to be the whole-school approach. As Galloway and Goodwin (1987) put it, the idea of a whole-school approach to behaviour was brought into use in the field of behaviour management because learning and behavioural difficulties were seen as the product of the pupils' experiences at school; and that the idea was to help the critical evaluation of the school climate become more detailed. Stone (1990) comments:

> "There needs to be a whole-school approach to meeting behavioural as well as the learning needs of the children on roll."
>
> (ibid: p.46)

Charlton and David (1993) are also worthy of note, particularly their view that the aim of a whole-school approach is to help provide a healthy/good environment in school for learning and promoting good behaviour. Most obvious of all, however, is the idea of a 'whole-school' approach to the analysis of behavioural problems has not been subject to serious debate. This view is echoed by Galloway and Goodwin (1987), in their work on the education of disturbing children, that "in an ordinary school few recognise the full extent of the school's influence, for better or worse, upon pupils' behaviour" (ibid:

p.173). Similarly, Watkins and Wagner (1987) condemn researchers for not considering the term 'whole-school approach' as the whole-formal or more tangible features (p.37) such as size of school, age of buildings, existence of uniform (p.39), corridors, the physical arrangements in the classroom - desks/chairs/blackboard (p.65). Furthermore, a detailed and careful review of the literature referring solely to the organisation in ordinary primary school/classroom for pupils by Williams (1988) led her to state that pupils' life in school depends in part on the physical environment conditions of school and that a whole-school approach in physical terms has been understated (ibid: pp.24, 28). With these arguments in mind, it seems the phrase "whole-school approach" has been used by a number of writers (McGuiness, 1989; Wheldall, ed., 1992; Jones and Jones, 1992) for limited reasons: that is, for pupil-pupil or teacher-pupil interaction.

A whole-school approach is defined by Entwhistle et al (1990) as follows:

> In ... school ... as part of a movement which has been called the 'whole-school approach' ... The whole-school organises its responsibility for meeting the ... needs of pupils ..."
>
> (pp.1088-1089)

More recently, Smith and Laslet (1993) define the whole-school approach to managing pupils' behaviour as the evaluation is concerned with effects upon pupils behaviour of all aspects of the school environment. Charlton and David (1993) define the whole- school approach to behaviour in school as the psychological notion for examining the range of environmental factors in school which may be impinging upon the behaviour of pupils; and developing strategies within the school setting which help prevent disruptive behaviour from arising/re-occurring.

As can be seen above, the literature on the whole-school approach identify the physical environment of school as an essential area to be taken into account when considering the influence upon pupils' behaviour of the environmental factors within the school. These authors underline the point that a whole-school approach to managing behaviour permeates the whole life of the school to be evaluated. Therefore, my point is that if the physical environment aspects of the school is not taken into account – as Watkins and

Wagner (1987) argue, then the idea is most likely to be less effective for the understanding and explanation of discipline issues in schools (pp.43-44). Moreover, even the available "whole-school approach"-based analyses have mainly focused on pupil-pupil or pupil-teacher relations (as mentioned earlier, sometimes known as the school environment). Further in defining the idea of a whole school approach the phrase "environment" appears very frequently. As already discussed above, it refers to both social and physical realities. It will be useful at this stage to point out that learning and growing up in school is not a matter of simply teacher-pupil interaction, because schools exist partly in the physical form. It seems, that formal school is the result of an interaction between teacher-pupil and the physical settings. As described by Spencer et al (1989) perceptions of school and the extent to which it can fulfil the child's or adolescent's needs, depends not only on social-organisational features but also on the physical environment settings (p.233). Galloway and Goodwin (1987: p,47) wholeheartedly agrees:

> "We should not, however, overlook the possibility ... that physical factors may contribute ... to behavioural and learning problems."
>
> (p.47)

This definition suggests that a 'whole-school approach' is not only to concern itself with teacher-pupil/pupil-pupil interaction, but must of necessity include the setting or conditions. What is in the writer's mind is to observe a child in a variety of activities and assess the influence of different aspects of both social and physical environments within the school situations (Sayer, 1988, p.15). Thus, the physical environment can seem unescapable in any analysis of efficiency in management systems of school and encouraging good behaviour, as it is a main part of the school as defined by the idea of a whole-school approach. In light of the review above, I have attempted to describe the idea of a 'whole-school approach' diagrammatically in Figure B1 and B2; to emphasise the position of the physical environment aspects of school. In other words, to speak of a 'whole school approach' without understanding its parts, as Watkins and Wagner (1987) and Charlton and David (1993) state, would make it difficult to use from a practical

standpoint; and prospects can be made in understanding behavioural problems in school by using the 'whole-school approach' as long as we know what it involves. This fact necessarily obliges me to try to penetrate, in my deliberations, behind accounts of the physical environment.

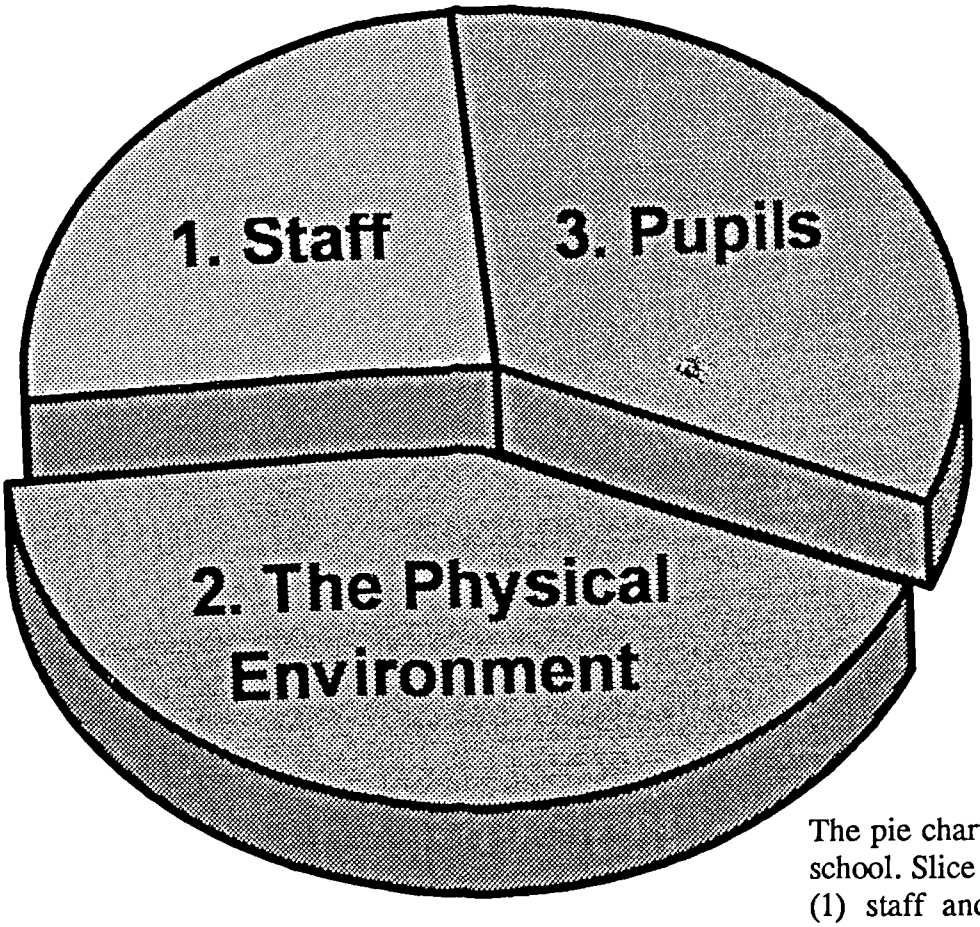
Other authors, such as Rutter et al (1979), as we shall see later, found that the physical environment played only a small part in the total matrix of influence of behavioural problems in schools. In terms of a 'whole-school approach' it would still be necessary to examine those influences. We may fail to note, as Galloway and Goodwin (1987) put it, to what extent there is a problem at all, if we neglect the physical aspects of the school environment.

Some of what has been written about behaviour in schools in recent years has gone so far as to allege that the problems are the result of inadequacy, and poor conditions in which the physical environment may be deeply involved (Watkins and Wagner, 1987; Spencer, Blades and Mosley, 1989; Elton Report, 1989). To take an example of what evidence some writers present, Dunham's work is interesting. Dunham carried out an exploratory comparative study of staff stress in two West German and two English comprehensive schools. Teachers completed a questionnaire concerned with stress situations and a check list of stress responses. The number of teachers who responded to the questionnaire is not reported in the official document. Dunham also interviewed the teachers with a view to obtain their recommendations for the reduction of stress. He found that a connection existed between teachers stress and physical environment conditions of the schools. As he states:

> "the biggest source of pressure...in school...is the physical lack of space, within and without the building. The classrooms have high windows, the playground space is limited and there is no grassy area. The hall which is in use all day and contains the PE climbing equipment, also serves as a dining area and there is a shortage of tables and chairs. We have new exciting equipment which requires storage in a easily accessible place. Finding a place proves extremely difficult, and entails constant re-thinking. The display of children's work uses space which is at a premium and which needs to be carefully thought out to avoid damage. The lack of space is of course, accentuated by high class numbers. The dinner hour causes pressure, as most of the children stay either for lunch or sandwiches and there is pressure throughout the morning and afternoon breaks with so many children to supervise. The large

The Main Parts of the School

Figure B1



The pie chart represents the school. Slice (3) pupils, slice (1) staff and slice (2) the physical environment.

It should be remembered that there are several factors, in terms of background, which make up each part of these three main parts of the whole-school.

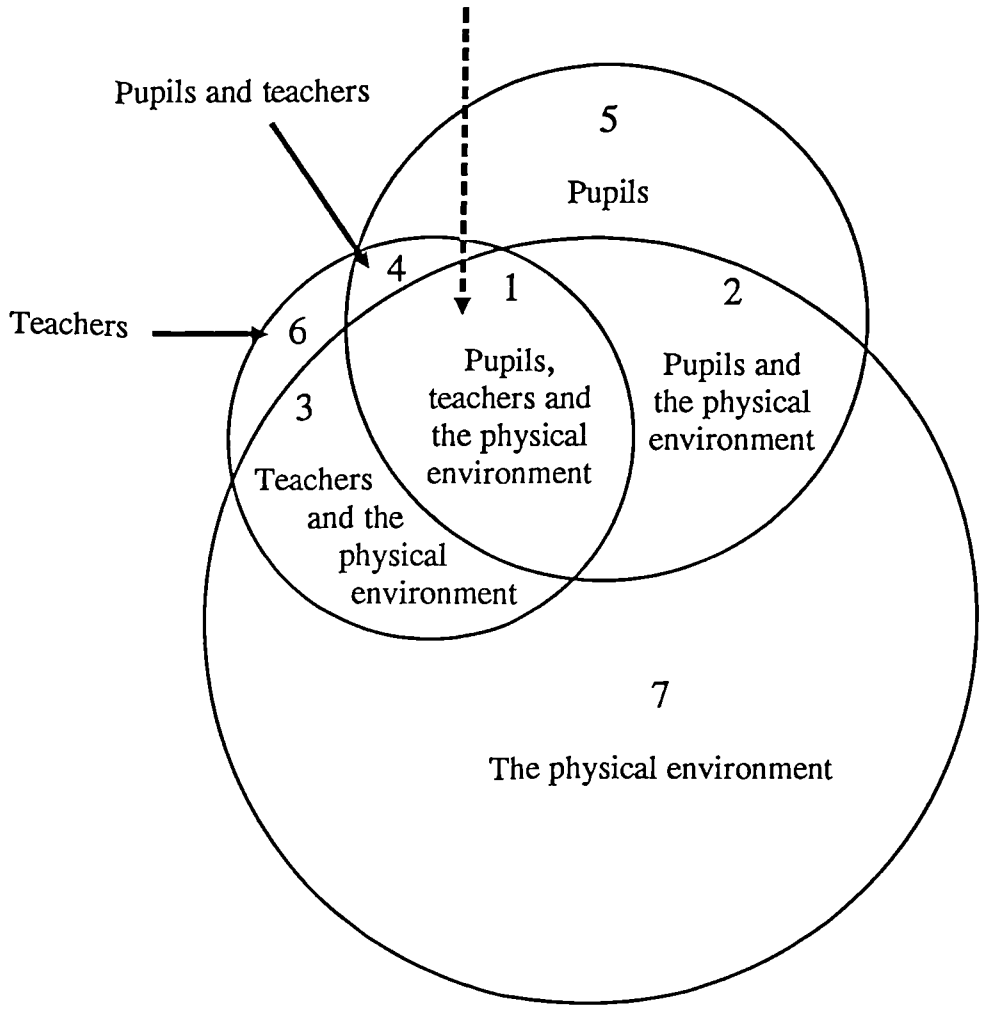
A whole-school approach and response to school can be viewed this way: Anything that is produced in school involving interactions of these elements. The physical environment is part of it. The basis of this preparation is to locate the place of the physical environment.

Perspective of the 'Whole-School Approach'

Complex Relations in School

Figure B2 Circles represent the physical environment of school, pupils and teacher and their shared (intersection) reciprocal effects.

[No. 1 - The three main elements of school from the standpoint of interaction]



In connection with this figure B2, my argument is that when we focus on structure of school, we intentionally leave aside other aspects which are always the total picture, and we do not give any explanation for it. But we should be reminded that our limitation to the knowing aspect of behaviour in school, we need to realise that all parts are related to each other and none can function in isolation; and the physical environment is an aspect.

numbers prove also very difficult for untrained Welfare ladies to manage, which gives rise to tension".

(p.59)

Most important, particularly for this section of the chapter, is Dunham's conclusion that for the procedure of a whole-school approach to be effective the buildings and general environment within the school will need to be involved (Dunham 1992, p.154). This supports the argument for the proposed analysis. Are the physical factors not connected? It would seem obvious from the standpoint of a whole-school approach to identify even the smallest environmental impact to ensure that the school as a place of child rearing, and its settings, should be congruent with its aims and not encourage behaviour problems in pupils.

4. Causality and Behaviour: the Case of the School Physical Environment

The purpose of this section of the chapter is to reflect on the perceived trigger of behaviour. In so doing, I attempt to highlight the relationship between the physical school environment-pupils' behaviour by casting it into associated areas. Before going any further; mention should be made here that the 'causal' model views behaviour as an extraordinarily complex matter and sees no one single factor as accountable for behaviour, rather it considers that behaviour is related directly to a large number of associated variables. As will become apparent in this section, this kind of model is by no means confined to social environment or personality, but applies equally to the physical environment situations.

There has been interest in looking for the cause of behaviour, such as delinquent behaviour in young people. To take an example: *Delinquency, Its Roots, Careers and Prospects*, by West (1982). This book is a report of a twenty-year project, directed throughout by the author. The project is sometimes known as the Cambridge Study in Delinquent Development because it was carried out for the Cambridge University Institute of Criminology. The aim of the project was to obtain a better understanding of the reasons why youngsters become delinquent. The research was a systematic survey

of a sample of some four hundred ordinary young males recruited, at age 8, from a working- class neighbourhood in London, and followed up to age 25, by which time a third of the group had acquired a criminal conviction record. Grants to support the research was made by the Home Office, Joint Working Party of the Department of Health and Social Security, and the Social Science Research Council. Bringing together the numerous reports – because the study went on so long, West was able to conclude that:

> "Theorists, both sociological and psychological, have sometimes tended to place emphasis on a particular event or circumstance. A broken home, lack of parental affection, insufficient discipline, poverty and neighbourhood culture have in turn been credited with being the main cause of delinquency. Our study, because it encompassed a wide range of items was able to show that delinquency most often arises from an accumulation of different pressures rather than from any single salient cause"
>
> (p.3)

Hence, one might be inclined to ask whether, in comparison with the psychological reasons, the physical environment can have any significance for understanding disruptive behaviour in school at all. From West's (1982) expression, clearly, the whole subject is still very much open to discussion or research. He presents a complex and interactive model. For reducing or understanding the problems of disruptive behaviour (standards of behaviour), it would seem to suggest looking at a range of factors within school context. There may be a number of basic issues which may need, if not to be settled, at least to be aired. One of those issues, could possibly be the question of examining those aspects of the physical settings of school environment, which has long been avoided, particularly in the systematic analysis of disruptive pupils behaviour. Moreover, though the physical environment approach may not have the remedies or solutions to all behavioural problems in school, it can make considerable contribution towards reducing, or to understanding of, disruptive behaviour in school. It is also possible to think of West's (1982) model, particularly that behaviour most often arises from an accumulation of different pressures or conditions, in another way. That is, as mentioned earlier in chapter two, components of the physical school environment are many; and are connected with the school

organisation and aims. Therefore, it may be necessary that those components are taken into account when attempting to understand pupils' behaviour links with school factors.

So far, therefore, it is not unreasonable that I should now do what I can to contribute to the understanding of behaviour in school by focusing on the impact of the physical environment. West has offered a hard-headed, complex correlational account of disruptive behaviour which allows for everything in school to be examined.

SUMMARY

The main points of this chapter are that:

1. The importance of behavioural-physical environment relationships is an acknowledged field and has theoretical background in social science.

2. The field of "environmental psychology" (which I call Physico-environmental psychology) exists to critically analyse the interrelationships of human behaviour and physical surroundings.

3. Behaviour arises from accumulation of different pressures rather than a single salient cause. This complexity in relation to the functions of factors within school environment, may be analysed into a number of dimensions – this permits the analysis of behaviour-physical environment of school itself.

4. A "whole-school approach" to managing behaviour of pupils which has been used in schools as a way of understanding behaviour, suggests contextual general environment evaluation to assist the child's progress and success of the school at work. The school physical environmental conditions are a component of this evaluation.

The discussed concepts suggest that the physical environment of school cannot be said to have no influence on pupils' behaviour. A further encouraging conclusion with regard to the present study is the notion that physical environment-behaviour relationship is a recognised subject of scientific analysis, which suggests that it is a fit (reasonable) subject

for independent enquiry in related environments, which in my case is the school environment.

The next chapter considers some relevant psychological theories. One of the reasons for this attempt is to assemble a critical base so as to establish the present research more firmly. Another reason is to determine the future of the relationship between the school physical environment and pupils' behaviour research. Moreover, it was thought that the widely used psychological theories would help in forming hypothesis to examine and develop methods of enquiry in carrying the empirical part of the study. As such, the next chapter considers some relevant psychological theories.

CHAPTER 4

CONSIDERATION OF SELECTED RELEVANT PSYCHOLOGICAL THEORIES

> "Behaviouralism is said to be at fault in failing to recognise that what is important is 'how the situation looks to a person' or 'how a person interprets a situation' or 'what meaning a situation has for a person'. But to investigate how a situation looks to a person, or how he interprets it or what meaning it has for him, we must examine his behaviour with respect to it, including his description of it."
>
> (Skinner, 1974:p.77)

INTRODUCTION

The previous chapter explored concepts which are central to the thesis arguing a relationship between pupils' behaviour and the physical environment of school. The focus and purpose here is to review pertinent selected theories and assess their possible contribution to a study of the relationship between the physical school environment and pupil behaviour.

THE RATIONALE BEHIND USE OF THEORY

The need for a theory in this study can be argued in general terms. This study considers the idea that in any fully developed field, we find a continuum from practitioner tackling real problems through methodologists and theoreticians developing models (Preiser, 1973; Gross, 1992). Different psychologists make different assumptions about what particular aspects of a person are worthy of study, sometimes to the exclusion of others, and this helps to determine an underlying model or image of what human beings are like. In turn, this model or image determines a view of psychological normality, the nature of development, preferred methods of study, the major cause(s) of behaviour disorder or abnormality and the preferred methods and goals of treatment. Thomas (1985) defines a theory as 'an explanation of how the facts fit together' and he likens a theory to a lens through which to view the subject matter, filtering out certain facts and giving a particular

pattern to those it lets in. Similar definitions with respect to the understanding of physical environment-behaviour have been offered by Heimstra and McFarling (1978), Bell, Fisher, Baum and Greene (1990).

The use of theories (seen as a complex set of interrelated statements which attempts to explain certain observed phenomena) in any study is for grouping items so as to reduce and order the confusion. Also, since many of the pieces of descriptions of behaviour – the physical environment relationships within school are contradictory, if not completely unrecognised: so theory in this sense is to help the study to locate the gap, expose inconsistencies and allow the field study to draw defensible inferences. Thus, four major theoretical approaches, particularly those connected with behaviour-physical environment relationship will make up this section of the study: namely, (1) operant conditioning; (2) psychoanalysis; (3) field theory; and (4) ecological psychology approaches.

1. SKINNER'S OPERANT CONDITIONING THEORY

Skinner's (1953, 1969, 1971, 1973, 1974) operant conditioning theory is an example of a general theory of human behaviour which can explain pupils' behaviour and contingent environmental effects. A theory often referred to (Altman, 1975; Docking, 1987), by Skinner himself (1974:pp.39,46), as a 'behaviour which is the consequence of reinforcement, it is more likely to occur again'. Skinner (1973) does not consider unconscious psychic force, which is at the core of Freud's (1933) psychoanalysis theory (presented below), as a concept of value in understanding or trying to modify the way a person acts; rather he prefers to think of human behaviour as solely shaped by environmental contingencies or reinforcements. The source of this reinforcement may be the social environment (positive or negative), and physical laws also operate to provide consistent reinforcement contingencies for some acts involving the physical environment. Skinner (1974) states:

> "A very different process, through which a person comes to deal effectively with a new environment, is operant conditioning. Many things in the environment, such as food and water, sexual contact, and escape from harm, are crucial for the survival of the individual and the species, and any behaviour which produces them therefore has survival value."
>
> (p.39)

From the view point of the physical environment in particular, Skinner makes a further claim that social reinforcement cannot be described without referring to any of the physical features it may possess. He then goes on:

> "... social reinforcement is usually a matter of personal mediation. When a mother feeds her child, the food, as primary reinforcer is not social, but the mother's behaviour in presenting it is."
>
> (Skinner, 1974. In Moos and Insel, edition:pp.497)

It may help to give a brief summary of Skinner's theory here: the fundamental assumption of operant theory is that behaviour is determined by its consequences. If the consequences are rewarding, it will be likely to recur in the future. If the consequences are not rewarding, the behaviour will be less likely to recur. According to this perspective, environmentally relevant behaviour can be predicted on the basis of its rewarding consequences.

In his book entitled *About Behaviour* (1974), Skinner makes a similar statement:

> "The process of operant conditioning ... when a bit of behaviour has the kind of consequence called reinforcing, it is more likely ....: a glass of water is positively reinforcing when we are thirsty, and if we then draw and drink a glass of water, we are more likely to do so again on similar occasions. A negative reinforcer strengthens any behaviour that reduces or terminates it: when we take off a shoe that is pinching, the reduction in pressure is negatively reinforcing, and we are more likely to do so again when a shoe pinches."
>
> (p.46)

The assumption to draw from these quotations is that formal schools are particular physical settings which may be experiences in similar ways by the pupils. Also if, as we shall see in Chapter 5, characteristics of the physical environment of school are mixed – "good" and "poor" – it may be that pupils' responses (often referred to by Skinner as

operant behaviour) are mixed. This may also explain matters of individual pupils' responses. But unless we examine them we cannot know.

Although a response is usually considered by Skinner as a single bit of behaviour, easy to identify separately, he did not deny the fact that it is sometimes less clear where one operant stops and another starts. Skinner thus points out that if a series of operants must occur in a particular sequence in order to obtain reinforcements, they become organised in a chain. The whole chain then comes to have some of the characteristics of a single operant, since the whole chain is the response unit that gets reinforced. In order to get a drink of water (of the reinforced condition felt as thirsty), for example, one may have to get up from a chair, walk into the kitchen, open a cupboard, take down a glass, fill the glass with water from the faucet, raise it to one's mouth and drink (the well-known Skinner, 1953, box was organised in a chain). Clearly this chain is made up of many operant responses, yet in another sense it functions as a single operant. If at any point the chain is broken – if there is no glass, or if the faucet is broken, or if there is some other obstruction, the whole chain up to that point tends to undergo extinction/deterioration. From this point of view operant conditioning seems to be concerned with formal situations. But schools remain, of course, an instance of such operant chain environment which function in some degree as units and in these units, the physical environment plays an important role as a behaviour setting (Spencer et al, 1989).

An important point about Skinner's reinforcers, both positive and negative, is that they can be conditioned: that is, environment can be changed/built in form of reward. For example, a sign reading "restaurant" will serve as a conditioned positive reinforcer for a hungry person in a strange city, because such signs have been associated with food in the past. Similarly, a stimulus that occurs with a negative reinforcer tends to become a conditioned negative reinforcer, as in the familiar case of the burnt child who (Skinner 1974) learns to avoid the stove even when it is cold. A good example of this comes from the study of a psychiatric ward by Ittelso and his colleagues (Ittelso et al, 1970). These

investigators noted that an overheated, poorly furnished solarium was rarely used by patients. When drapes were installed to keep out the hot sun and more comfortable furniture was added, the patients began to occupy the room more frequently and to show increased social behaviour. For the patients, the refurnished aspects of the room came to signal that entering the room would lead to different consequences that it had formerly – they would be more comfortable and there would be people with whom they could talk. Unfortunately, it should be kept in mind that such a systematic study is still missing in terms of British secondary schools.

On the side of research methods, even though Skinner draws most conclusions on human behaviour from his laboratory experiments with animals (Skinner, 1953, box – rat/pigeon), he still often refers to field or survey research. Of particular interest to the present study is Skinner's assumption that if anyone wants to discover whether or not physical environment of a particular setting might have any influence on a person's behaviour, he/she can simply predict on its rewarding consequences, and unpleasant consequences.

Thus, an attempt will be made to test the validity of this approach by asking the teachers and pupils' during the field study, and using observations made.

2. PSYCHOANALYSIS

Freud's (1895, 1922, 1927) theory of psychoanalysis has a strong link with human behaviour-physical environment relationships. He conceived of man, and all events that followed from his exalted position at the apex of the phylogenetic scale, as rooted in a set of inherent instinctual drives, the life (*Eros*) and death (*Thanatos*) instincts. These drives were universal, fixed in an inexorable sequence of development, and ultimately the basis for all human behaviour and experience. At the root of Freud's system was the concept of intrapsychic conflicts, for example the Oedipus complex, whose particular form, the ways that they were constrained, and the kinds of consequences they had all depended on the socialisation experiences of the individual. To a considerable degree these conflicts, the

defence mechanisms made necessary to control them, and indeed the real meaning of what the individual thought, did, and felt remained at an unconscious level. It was at this level that Freud conceived the more conscious and reality-oriented drives and attitudes, which he called the *ego*, that reconciled the demands of the instinctual drives (the *id*) and the physical, social and cultural mores of organised society – of which a school may be a small part (Baron et al, 1991).

In general, Freud was an environmentalist in the sense that he felt the social and the interpersonal physical environment shaped and guided the form and consequences of the person's life and death strivings. An inherent succession of psychosexual stages beginning at birth and extending through early adolescence unfolds under the influence of particular people (for example, parents, siblings, friends, and teachers), who are responsible for overseeing the child's basic experiences and activities (eating, playing, sleeping, learning or defecating) in prescribed human settings (home, playgrounds, school). These people, in these settings, establishing the specific form and content of experiences and activities, determine the level, the particular patterning, and ultimate adult development. It is in this sense that Freud, as Gross (1992) comments, can be described as the consumer reductionist. All human events, activities, forms, and concepts, whether of the person, group or society at large, were manifestations and expressions of the psychosexual system and its development, and therefore could be explained on this basis (Baron et al, 1991).

What implications can I then draw from Freud's psychoanalytic theory about the nature and meaning of the physical environment? At this point, it has to be noted that Freud's intention was to:

> "... furnish a psychology that shall be a natural science: that is to represent psychical processes at quantitatively determinate state of specifiable material particles ..."
>
> (Freud, 1895; quoted in Gross, 1992:p.47)

At least three major implications relevant to my study can be specified from his theory. First, the physical environment is experienced rather than being observed or responded

to as if it existed in some objective sense (Spencer et al, 1989; Bell et al, 1990). If all human behaviour and experience express the ego-id relationships and intrapsychic conflicts in some modified and disguised forms, then this implies that in meaning, significance and function, the individual's environment itself must be rooted in the underlying intrapsychic system. This implication in turn brings us to still another. Physical environments, their form, content and meaning, express the unconscious needs, values and conflicts of the person. In Freud's system the often-referred-to expressive symbolism (see Cross, 1993) of man's built environment does not reflect so much the underlying value system of the culture as it does the underlying psychodynamics of individual behaviour and experience. In sum, man's cultural, social and physical systems express a universal basic personality structure (as defined in Chapter 3 of this study) that is rooted in the conflicts among and the satisfactions of instinctual drives.

Much of Freud's system of psychosexual development has implications for the design and use of physical settings. The feeding and toilet training of the child, the sexual relations of the parents, the social interactions of siblings, and many other aspects of this developmental approach depend not only on the people involved but also on the setting in which these activities occur. Given the centrality of the Oedipus and Electra complexes in Freud's theory, for example, privacy is crucial in the sexual relations of parents. If the small boy has strong sexual attachments for the mother, then what he can see and hear when his parents are involved in any kind of "love and romance" either in their bedroom or out, is significant. Given the emphasis on toilet training in Freud's theory, it is not only important how and by whom the child is trained, but where as well. The design of the bathroom, particularly with respect to its privacy aspects, is important. Similar conclusions can be drawn about the design of kitchens in the light of Freud's theory of the oral stage in children and the significance of feeding.

Freud's approach, however, goes well beyond these specific implications. The rationale of man's built environment – regardless of cultural differences – reflects his unconscious

desires and his ways of both satisfying and restraining his instinctual drives. This type of theory seem relevant in that it considers that physical setting can limit, influence and even determine behaviour – this should draw the attention of designers.

It is surprising that there has been little, if any, direct application of psychoanalytic ideas in independent analysis of the physical environment of school in terms of behaviour, but an exception was a pioneer paper by Charles Madge (1957) in which he pointed to the high importance in the planning function of distinguishing private from pupils' space and suggested how residents of housing estates have models of behaviour deriving from early childhood experiences. For example, the house symbolises the mother's body and is a protective shell separating the familiar from the unfamiliar. The confidence which the child acquires in moving from the mother is reflected in the ease with which the residents move between the home and the neighbourhood, or his withdrawal into isolation. The repression of sensory pleasure in the mother's body is reflected in the external to which the resident may suppress aesthetic pleasure in the external appearance of houses in the use of colour, decoration and other physical arrangements. Madge also claimed that the garden may serve as a transitional socio-physical space where the 'libido flows through the garden to the outside world'. Similar conclusions can be drawn about sports halls, toilets, club rooms, special subject rooms and/or material resources for subjects in school. It is this that is the task of the present study.

3. LEWIN'S FIELD THEORY

Kurt Lewin's (1936, 1946, 1948, 1951) "field theory" has a major influence on relationships between human behaviours and physical environment. Lewin believed that the stream of activity we call human behaviour resulted form the continuing interaction of factors within the person, for example, needs, values, feelings and predispositions, with other external factors as they are perceived in a given behavioural setting. Thus, it was neither needs nor stimulus objects that determined how, when, and in what way a person behaves, but the constellation or pattern of inner and outer influences that he/she

experiences. This reasoning was at the nexus of Lewin's concept of the life space, which he defined as B=f (PE) in which behaviour (B) is seen as a function (f) of the interaction of personality and other individual factors (P), and the perceived environment of the individual (E).

Although Lewin's theory appears to give no direct consideration to the physical world, it can seem that his concept of "life space" included more than just social environment. Important at this point are some of the terms he employed to describe the environment generally. Thus, objects, situations or other people in the person's life space may have positive or negative "valences" depending on their ability to reduce or increase respectively the needs or intentions of the person. "Locomotion", which could either be social, conceptual or physical, means a change of position with respect to some goal region. The thirsty man going across the street to drink at a water fountain in the park employs physical locomotion towards the goal region "water fountain". In contrast, if a pupil with learning difficulties, trying to favour an ineffective teacher, is also attempting to locomote, toward the socially desirable goal of being liked by the teacher. A "barrier" is a boundary in the 'life space' of the person that offers resistance to locomotion. It may be a physical barrier if the door to the toilet is locked, or it may be a social barrier if the pupil sees his/her teacher as helpless and more difficult. The foremost relevance of Lewin's theory to my study are that: 1) immediate environment can influence behaviour; and 2) that observation of the behaviour as it occurs in a natural setting is fundamental.

I have now briefly done justice to the extensive theoretical framework developed by Lewin in his attempt to conceptualise the content, structure and dynamics (motivation forces) of the life space. However, as a final comment, Lewin never viewed the life space, or the experienced world of a person, as so supreme in relation to behaviour that reality and nonconscious events (for example, a wall the person is unaware of) had no place in his approach. Thus he pointed out that consciousness, or what the person was actually aware of, could not be used as a criterion of what existed psychologically:

> "There is no question, for instance, that when a person is in a familiar room, the part of the wall which is behind him belongs to his momentary environments."
>
> (Lewin, 1936:p.18)

In Lewin's formulation the influence of this kind of reality was not to be denied. Thus, 'the foreign hull of the life space' was defined as "facts not subject to psychological laws but which influences the state of the life space" (ibid:p.206). If our thirsty man gets to the fountain and suddenly finds the water discoloured and polluted because the city failed to purify its reservoir, we can at least argue he will not drink it. The action, or better said, the inaction of the water department, clearly had consequences for his behaviour.

Thus, the two assumptions which can be drawn from Lewin's "field theory" for the present study are:

1) The view expressed that a pupil would behave differently with different teachers or in different classrooms (see Chapter 2 and Appendix 1; Tattum, 1982; Lovey, 1992) is perhaps partly due to the sociophysical environment of schools/class-rooms.

2) With the HMI (1988-1991) findings, particularly, of poor characteristics of the physical environment of the schools (presented in the following chapter, 5) in mind, there could be several physical limitations in school to pupils' good behaviours.

At the methodological level, Lewin was also aware of the fact that a theory does not easily come to the practical field without empirical testing of its importance. In this sense, Lewin regarded that the precise research of basic psychological problems is that which studies 'events or demonstrates evidence as they occur in the real'. Here, the major emphasis is on naturally occurring human behaviour. Behaviour has to be studied as it occurs in an uncontrolled natural setting. The researcher has no control over the environment in question. The researcher does not have to depend on the willingness of the subjects to respond verbally or otherwise to the experimental variables but observes and records the behaviour of interest as it takes place in a particular environment. Although the researcher variable on the behaviour being studied

(observed), no attempt is made to manipulate these variables or to influence the behaviour that takes place, a method I intend to use in the present study.

ECOLOGICAL PSYCHOLOGY APPROACH

Another theory that is relevant to my attempts to arrive at a meaningful understanding of the relationships between pupils' behaviour and the physical environment of their schools is that of Barker's (1963a, 1963b, 1968, 1978, 1979) ecological psychology. His "ecological psychology" can be defined as the psychology of environment, or what he calls a "behaviour setting". A behaviour setting is bounded in space and time and has a structure which interrelates physical, social and cultural or unique properties so that it elicits common or regularised forms of behaviour:

> "... Behaviour setting is ... a standing behaviour pattern together with the part of the milieu to which the behaviour is attached and with which it has a synomorphic relationship."
>
> (Barker, 1978:p.27)

Barker's objective was to determine the relationships between what he calls the extra-individual pattern of behaviour – that is, the behaviour that all people en masse reveal in a behaviour setting – and the structural properties of that setting:

> "Behaviour settings are behaviour-milieu phenomena; the milieu is circumjacent to the standing pattern of behaviour. A person is seen to enter, to be included in, to be surrounded by a store or a picnic."
>
> (Barker, 1978:p.27)

Any institutionalised setting such as a church, a hotel terrace or school, is of concern to ecological psychologists. To take the example of the hotel terrace, it would qualify as a behaviour setting in the sense that its physical properties (arrangement of chairs, small tables, railways) as well as their implicit purpose (relaxation, conversation, drinking, card playing, etc.) impose on those entering in an explicit mode of behaviour. The uses

of all behaviour settings and their objects are to a relatively large extent socially defined: that is, factors within a setting are interrelated.

The point from Barker's approach that the environment he is talking about has a reality of its own. This is the objective rather than the psychological environment which is at the core of Lewin's life space (presented above in this chapter). However, if we take a closer look it seems as if this environment has a reality of its own, for Barker does not come to grips with the social definitions applied to different spaces. Although he speaks of behaviour settings in terms of space and place, far more is involved conceptually than a physical setting. He stresses the fact that the physical setting itself has a social and "cultural" definition resulting from the intended purposes of the setting, the kind of people who will use it, and what activities and immediate outcomes will occur. A behaviour setting is not simply a space with any set of boundaries and a random array of objects. On the contrary, its physical dimensions, the nature of its objects, where and/or how they are placed are all determined by the socially defined character of the situation.

Given his concern with relating behavioural settings with en masse behaviour, Barker's approach can be erroneously conceived of as behaviouristic or S-R (Situation-Response) in character. Such an interpretation is not valid because Barker's theoretical focus is not the psychology of individual behaviour but actually aggregates of people responding to physical settings. Of course in seeking those relationships he holds, a similar view as Freud (1895), in abeyance the inner individual psychological processes that determine by definition all human behaviour and experience: meaning personality can still relate to external environment.

At the core of Barker's definition of "behaviour setting" is a social purpose or meaning involving a set of social rules (which I define in chapter two of this study as aims) which unifies or integrates into an orderly system what people do, how they do it, with whom they do it and when and for what intervals of time. According to Barker, settings have aims. If we think of a baseball game, a college prom, or a school classroom and, it should

be noted, the full meaning of Barker's ecological behaviour theory becomes evident. What emerges in its own right is that Barker's environment is hardly the geographical environment defined by Koffka (1935). Its reality is not physical but "physico-socially" defined.

Barker's ecological psychology dictates (identifies) its own methodology, and it is clearly not that of the laboratory, or other kinds of contrived human settings. Behaviour is to be observed in everyday, ordinary situations, to be recorded under so-called "free-fall" conditions. 'Psychology has been so busy selecting from, imposing upon, and rearranging the behaviour of its subjects' he writes:

> "that it has until very recently neglected to note behaviour's clear structure when it is not molested by tests, experiments, questionnaires and interviews."
>
> (Barker, 1963:p.24)

From this quotation, one thing which seems to have been missed in Barker's attempts to define effective research methods is that people change – that is, no single method is completely perfect to gather information. There needs to be other methods of which observation is another to reach a reasonable conclusion.

But in general, it might seem that Barker is proposing the obvious: I have defined the purposes of various behaviour settings in terms of the behaviours necessary to satisfy these purposes. This may be true, but the fact is that beyond the obvious (defined) appropriate behaviours (for example, pupils eat in dining rooms), we know little else about these settings because we have rarely studied them. There are many questions to ask (it should be noted here that these questions are asked here to guide the researcher's thinking): What non-appropriate behaviours occur? What happens when behaviour settings having the same purposes vary in their physical dimension? What consequences does the arrangement of one behaviour setting have on the events in another that is related to it in time and/or space? What occurs when the stable structure of a behaviour setting is only partially maintained (for example, sometimes the jukebox in the local school snack

shop works and sometimes it doesn't)? I even have to ask what the properties of the common en masse behaviours revealed in behaviour settings are. Worth quoting in this respect is Barker's own statement:

> "Both science and society ask with greater urgency than previously: What are environments like? ... How do environments select and shape the people who inhabit them? What are the structural and dynamic properties of the environments to which people must adapt? These are questions for ecological psychology, and in particular, they pertain to the ecological environment and its consequences for men."
>
> (Barker, 1968:pp.3-4)

Wolman's (1973) definition of the role of "educational psychology" that it is concerned with the factors which affect not only academic performance but removal of "abnormal conditions" and "abnormal behaviours" in the school situation is correct; and if the idea of a whole-school approach to disruptive behaviour in school (presented in Chapter 3 of this study) is a psychological perspective, the above questions raised by, and with the help of, Barker's ecological theory are then relevant to the school situation and would improve the task of psychology of discipline in the school, that is because all factors of school are supposed to perform the essential school setting function, and good behaviour is an essential factor expected to be an outcome of school - so, if the quality of the physical school environment is good, good behaviour will increase; if it is bad, good behaviour will diminish.

SUMMARY

Although each of the four theories discussed is in some ways unique, there are also numerous points of convergence, suggesting that an attempt to integrate them into a general model may be worthwhile. Those which can serve as a guide to the present study are the following:

1) Research should reflect the interdependencies of the human behaviour-physical environment relationship.

2) Studies should not treat persons or settings merely as objects to be measured, but rather as interacting components of a system.

3) Settings are themselves complex systems, involving the behaviour of many people over space at any given time. The demand character of any institution setting for appropriate behaviours in general rather than highly specific. It allows and requires variation and change in the behaviour of the person in his continuing reactions to the setting. What this means is that behaviour settings involve human and non-human components in a particular programme of events. Then, settings have definitions and meanings for the perceiver with respect to his role in them, how they should look and be used, what other people (number of people) should be involved, what activities should go on in them, or what they stand for symbolically. This is true not just in the moment, but over time and with respect to similar physical settings as well.

The point to argue then is that the regularity and consistency of behaviour in given physical settings are closely and tightly interwoven with the fabric of social, organisational and cultural systems that circumscribe the day-to-day life of any group of individuals. In effect, any given physical environment is not only a behavioural environment but also a social, organisational and cultural environment, as I discuss of the school (Chapter 2). The point is that human beings' behaviour varies greatly in different situations or settings. Most human institutions have recognised settings, such as classrooms, dining rooms, sports hall, these settings are not at all random – they are usually consciously chosen or created to make it easier to attain certain goals and thus expectation of relevant behaviour. In the case of school, the setting may contain special equipment such as a blackboard, and slide projector or patterns of interaction and relationships or patterns of interaction and not others, by the design and placing of furniture. It is thus essential to examine an institution and its settings over time in order to reveal the way in which a person

makes use of, or is affected by, his/her physical environment (see example, Appendix 2).

4) Not only does the environment act on people, but they act on environment. Most of the time, the physical environment has been treated as an independent variable – as something that acts on, determines, or causes behaviour. Thus one often encounters the idea that physical things must be designed for people to meet their needs and to satisfy their purposes. Implicit in this environment as determinant of behaviour notion is the idea that man's control over the environment is to be limited, that environments are to be tailored to people in a static, nonmodifiable form. The emphasis now is that material environments can be shaped and altered. People become environmental change agents, not merely recipients of environmental influences. According to this new approach, the environment becomes an extension of people's own being and personalities. For example, the concepts of classroom and personal space imply an active, coping of the environment, not merely reactions by people to environmental stimuli. Another strength of this model is that similar situations (settings) may produce different behaviour in some individuals but not in others. It may also be that different behaviour is similar in the same environment. All these can only be imagery without a practical base.

5) This people-environment interaction approach also assumes a dynamic, changing quality of people's behaviour-physical environment relations. Personal space expands and contracts, and people alter physical environmental conditions. Although this is a seemingly obvious truism, practitioners and researchers often act as if designed environments were fixed and unchanging through time. The fact is that social systems adapt and struggle, and this fact needs to be incorporated into school physical environmental design-pupil behavioural relations.

6) Behaviour settings have a variety of components and interdependence exists between them. Within a school as a behavioural setting, for example, human components are mainly pupils, some teachers, some cleaners; and the non-human components range from classrooms to toilets, and teaching materials to library resources. In view of such variety, one can ask, what makes behaviour settings a unitary phenomenon? The answer is that each part of the setting is dependent on every other part; and in this view formal schools are behavioural settings, they function as a unit, and everything that happens there affects pupils' behaviour.

7) The conditions in the physical environment have important implications for the child-rearing system. Children learn the use and care of material things. For example, in his account of a psychoanalysis theory, which is often associated with sexual attachment of the child to its mother, Freud (1895, 1922, 1927) stresses that child-rearing involves training a child to use a toilet. This is an extremely important point which applies to the schools. The formal schools are involved in child-rearing.

8) Behaviour may be governed by particular physical environmental situations. For example, Skinnerian (1953, 1969) mechanistic accounts help to see how the behaviour of a child will vary somewhat according to where he/she is (e.g. home, school, play ground, library, laboratory) and who he/she is with (e.g. parents or school teacher). Of course, we know that things have to act in a particular way in certain given environments. In certain places persons are expected to behave in a particular way. It is by no means contradictory to note here that pupils may be expected to behave in accordance with a particular physical arrangement (e.g. the school library, the specialist subject room). This strongly suggests that it is possible to describe pupils' behaviour in accordance with a particular physical arrangement within school; but indeed this is only a theory of the relationship in question which will remain incomplete until evidence is derived from the study I have undertaken.

9) A final theme is that different levels of behaviour fit together as a "system" with various levels capable of substituting for, complementing or amplifying one another. This seems a good example as to how the schools operate. Although emphasis on one level of behaviour may be necessary at a particular time (pupil teacher relations), overemphasising on any level without integration can blind one to the system – like quality of the school physical environment-pupil behaviour relations.

Mention should be made here that all four theories reviewed contribute to the topic in question, in terms of knowledge and framework. However, they differ in their usefulness; for example, Skinner's theory is about direct connections and may be useful for understanding direct connections between behaviour and physical environment, but you cannot interpret all connections directly. Also, the psychoanalysis theory has mainly been used to research on sexual issues (Baron et al, 1990). It should also be noted in terms of the theories reviewed, that it is an extraordinarily complex matter of trying to account for human behaviour, and it is probable that no one theory provides a complete explanation. As such, some of the theories reviewed will be used less than others in the later stages of this study.

These four theories do generate three main research questions: a) what common properties of certain behaviour settings result in the same group behaviour; b) what happens when the structure or condition of a behaviour setting changes; c) what effect does one behaviour setting has on behaviour in another setting. However, these questions have not been adequately tested in terms of British secondary schools' physical environment – hence the attention in the present study, particularly to a) and b). These questions, and the contribution of the literature reviewed in other chapters of this study, will assist in formulating hypothetical propositions for the empirical aspect of the study.

In conclusion, the purpose of reviewing those selected psychological theories was to attempt to explore and explain the relationship between behaviour and physical

environment. As can be seen, the theories recognise that the characteristics of the physical factors in a given place (such as school) should meet with the aim of that particular environment or establishment. From a behavioural perspective, the theories stress that characteristics of the physical factors in a given place in part determines the user's behaviour and that careful attention should be given to the characteristics of the physical environment in trying to understand behaviour. Thus, there is room for understanding the connection between physical environment and human behaviour in the psychological theories; and the present researcher would like to understand this in the practice of secondary schools. As already noted, we then turn to official documents:- the HMI, which measures characteristics of the physical environment of individual schools. In particular, the HMI Reports (1991) have been found helpful in providing a theoretical framework within which to explore the possible links between the physical school environment and pupils' behaviour. In addition, mention must be made that the review of these theories and the relevant approaches reviewed in Chapter 2 of this study will influence what is going to be written in the later chapters.

CHAPTER 5

A REVIEW OF RECENT HMI SURVEYS ON THE PHYSICAL ENVIRONMENT OF SCHOOLS

> "Moving earth and planting a seed yields a flower. Writing about an event produces a story. And a student's perfect paper promotes a teacher's smile. Each of these actions result in positive environmental consequences. But some environmental changes are negative."
>
> (Medland and Vitale, 1984:p.46)

INTRODUCTION

In the previous chapter, I outlined some general psychological theories which deal with human behaviour in relation to physical environment. It was pointed out that the physical environment of a specific setting guides behaviour, influences and modifies it whether or not other people are present. In this and the following chapter, I will be reviewing some information about the schools themselves, and about life within them, in the search for factors which might further the understanding of the relationship between pupils' behaviour and the physical school environment. In this chapter I examine HMI reports to attempt to understand characteristics of the physical environment of the school. I recognise that HMI reports are pragmatic documents based on the realities that go on in the school. To me this is an important source of information and that is why there is a separate chapter for it. I want to find out what characteristics are reported by HMI of the physical environment of school and which, though HMI identify it as influencing academic performance, I use it to explore the behavioural link. Further, HMI surveys cover many secondary schools from all parts of England and Wales (not all of which have been examined). This breadth is especially useful for understanding the characteristics of the physical environment of different schools and/or classrooms within one school, since it is based on a sample of findings across the nation. Furthermore, it is also my intention to, in part, highlight the existing sources of information available on the characteristics of the physical environment of school.

HMI DOCUMENT SURVEY

Her Majesty's Inspectorate (HMI) was set up by the government to monitor the schools' function and highlight weaknesses of the schools which required attention. Their reports are publicly available. They include reference to the physical environment of school. I have, therefore, surveyed 30 recent HMI reports (published between 1988-1991, and represented in Tables 3 and 4) on visits to the individual secondary schools. The reports categorise the physical school environment as good or poor. The items or statements of both the good and poor physical environment are presented below in Tables 3 and 4, in the language of the HMIs. The phrases in the tables are exactly those used by the HMI. In Table 5, I reduce the items to categories of my own creation, the phrases used for forming the categories are still those of the HMI. Tables are used to put the data in more summarised form. While categories, it has to be noted, come to be a focus not only for bringing together the data cited in a number of HMI reports on individual schools and collected in a number of years (1988- 1991), but also for making the decision of analysing the details of characteristics of the physical school environment-pupils' behaviour link carefully.

OPPOSING CHARACTERISTICS

It should also be noted that although the number of items listed under each one of the two (good and poor) characteristics seem less or greater than the other, some of the physical features known as good are essentially opposites of the poor. A close look at the Tables 3 and 4, for example, shows that walls free from graffiti and buildings disfigured by graffiti are clearly opposite phrases. Similarly, inadequate signposts and adequate signposts are also relating to the same criterion. This analysis also seems to indicate that certain things which are satisfactory in some schools or classrooms are lacking in others. Also, the school experience characterised as "good" or "poor" suggest

Table 3: HMI diagnoses of the items of good physical environment of school

Category		Items of good physical environment	Schools										Total
			1	2	3	4	5	6	7	8	9	10	
State of buildings	1	Walls free from graffiti				√	√					√	3
	2	School buildings free from damage	√	√	√	√	√	√		√	√	√	9
Design of the buildings	1	Pleasant building	√	√	√	√	√	√	√	√			8
	2	Single site		√			√						2
	3	Adequate spaces in corridors				√	√						2
	4	Library located centrally					√						1
	5	Stairs well suited				√	√						2
	6	Large rooms	√	√		√	√	√	√	√		√	8
	7	Adequate rooms	√	√		√	√	√	√	√		√	8
Accommodation and space	1	Adequate sitting space in library		√	√		√						3
	2	Satisfactory accommodation for specialist subjects	√	√	√	√	√	√	√	√			8
	3	Equitable distribution of rooms	√	√			√						3
	4	Adequate and suitable staff offices	√	√	√	√	√	√	√	√		√	9
	5	Sufficient club rooms	√		√								2
	6	Pleasant CDT rooms					√						1
	7	Attractive social area			√	√	√						3
	8	Pleasant common room for students									√		1
	9	Adequate and special room for drama		√		√	√	√	√	√			6
	10	Adequate storage space	√	√	√	√	√	√	√	√		√	9
	11	Impressive assembly hall				√							1
	12	Suitable staff room	√	√	√	√	√					√	6
	13	Special media study room						√	√	√			3
	14	Adequate and efficient interview room					√	√	√	√		√	5
Sports requirements	1	Sufficient playing fields	√		√	√	√	√	√	√			7
	2	Swimming pool available			√		√						2
	3	Satisfactory sports hall		√	√	√	√	√	√	√	√		8
	4	Adequate provision of sports facilities		√	√		√	√	√	√	√		7
Furniture and decoration	1	Carpeted and maintained floor	√		√	√	√					√	5
	2	Attractive decoration	√		√	√	√	√	√	√		√	8
	3	Furnishing in a satisfactory condition	√	√	√	√	√				√	√	7
	4	Adequate furnishing	√	√		√	√				√		5
	5	Comfortable furniture in library		√	√	√		√	√	√	√	√	8
	6	Well arranged teaching rooms									√		1

Light and temperature	1	Satisfactory lighting in library	√	√	√		√					√	5
	2	Bright science laboratory				√	√						2
Cleanness and maintenance	1	Maintained floor	√	√	√	√	√	√	√	√	√	√	10
	2	High level of building maintenance									√	√	2
	3	School ground free from litter				√	√	√	√	√			5
	4	Good cared for equipment		√	√	√	√					√	5
Encouragement through display and communication	1	Efficient communication system (tele.)						√	√	√			3
	2	Impressive display of pupils' work		√		√	√				√		4
	3	Display of pupils' work regularly				√	√					√	3
Learning and teaching requirements	1	Adequate supply of practical equipment for drama		√	√	√	√	√	√	√			7
	2	Adequate supply of practical equipment for home economics					√	√	√	√			4
	3	Adequate number of computers		√	√		√	√	√	√	√	√	8
	4	Sufficient stock of reference books in library	√	√	√	√	√	√	√	√	√	√	10
	5	Library with sufficient reading materials	√	√	√		√	√	√	√	√	√	9
	6	Sufficient supply of musical instruments					√						1
	7	Sufficient equipment for every subject	√	√	√		√	√	√	√			7
	8	Satisfactory reprographics facilities				√	√					√	3
	9	Photocopiers available					√					√	2
	10	Frequent supply of multi-media				√							1
	11	Equitable distribution of resources across all subjects	√	√	√	√	√						5
	12	Adequate equipment for special educational needs	√	√	√		√						4
	13	Sufficient supply of science equipment				√	√						2
	14	Sufficient text books for classroom use	√	√	√	√	√	√	√	√		√	9
	15	Adequate provision of audio-visual aids	√	√	√	√	√	√	√	√		√	9
Outside grounds surrounding school building	1	Adequate signposts		√					√		√		3
	2	Enclosed landscaped area					√						1
	3	Spacious and inviting main entrance	√		√	√							3
Total			25	31	30	36	49	26	26	26	15	24	

Table 4: HMI diagnoses of the poor physical environment of schools

Category		Items of poor physical environment	Schools																			Total
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
State of buildings	1	Leaking roofs	√			√		√	√							√	√	√		√	√	√	10
	2	Cracking walls				√			√								√			√			4
	3	Peeling paints	√					√	√						√		√				√		6
	4	Broken windows	√			√							√								√		4
	5	Broken glass											√										1
	6	Rotting doors and windows							√												√	√	3
	7	Loose ceilings	√	√				√	√														4
	8	Damp walls	√		√			√	√	√												√	6
	9	Building(s) disfigured by graffiti			√								√										2
	10	Ragged curtains	√					√															2
	11	Old state of building(s)						√	√	√												√	4
	12	Flacking (flaking) asbestos						√	√	√												√	4
	13	Aging and decaying toilets						√									√		√			√	4
	14	Broken water taps													√								2
Design of buildings	1	Separate sites			√	√		√	√						√	√			√		√	√	9
	2	Inappropriate site of school							√			√											2
	3	Unattended external fabric of the building			√	√							√			√							4
	4	Unsatisfactory site of windows				√										√			√			√	5
	5	Rooms too small	√	√	√		√			√	√	√		√	√		√	√	√				12
	6	Shortage of rooms		√	√		√		√		√	√			√		√			√			9
	7	Poor ventilation							√												√		2
	8	Narrow corridors		√																			1
	9	A low ceiling above steps												√									1
	10	Inadequate toilets						√								√	√						3
	11	Lack of covered walk ways																				√	1
	12	Narrow stairs							√			√											2
	13	Unsatisfactory site of library							√			√											2
	14	External doors left open to weather														√							1

Accommodation and space	1	Lack of social areas			√		√									√	√				√	5
	2	Uneven provision of classroom size	√	√	√	√	√	√		√	√	√	√		√	√	√				√	14
	3	Insufficient laboratory accommodation		√	√	√		√	√	√	√		√	√	√	√	√	√		√	√	15
	4	Small staff rooms			√											√	√	√				4
	5	Lack of accommodation for drama			√			√						√							√	4
	6	Lack of accommodation for music			√									√	√		√			√		5
	7	Lack of accommodation for CDT						√						√		√	√					4
	8	Lack of recreation areas			√	√	√							√		√	√				√	7
	9	Inadequate room for interview			√		√				√					√						4
	10	Lack of accommodation for interview			√		√									√	√					4
	11	Small library for large school								√	√			√	√							4
	12	Overcrowded staff room			√												√	√	√			4
	14	Inadequate rooms for providing specialist subjects	√	√	√		√	√				√			√		√	√		√		10
	15	Lack of adequate separate work rooms for staff						√						√	√	√						4
	16	Unsatisfactory office space			√		√	√					√		√	√		√			√	8
	17	Lack of assembly hall			√																√	2
	18	Inadequate storage space			√	√	√			√	√			√	√		√			√	√	10
	19	Lack of space for teaching			√		√	√	√	√	√			√	√	√	√	√	√	√		13
	20	Laboratory located in separate floors/blocks			√	√														√		3
	21	Using dining hall for teaching												√								1
Sports requirements	1	Distant sports centre			√		√															2
	2	Lack of swimming pool				√																1
	3	Lack of showers in changing rooms																√				1
	4	Poor condition of play ground							√							√				√		3
	5	Inadequate sports field					√						√			√						3
	6	Inadequate sports facilities					√									√						2
Furniture and decoration	1	Lack of carpets						√						√	√							3
	2	Lack of curtains	√					√														2
	3	Poor decoration	√		√	√			√		√			√	√					√		8
	4	Old desks and chairs			√			√	√			√	√							√	√	7
	5	Lack of decoration	√		√	√		√				√		√	√					√		8
	6	Unmatched furniture	√		√		√	√	√			√	√	√						√	√	10
	7	Unsatisfactory dining facilities													√							1
	8	Poorly hung curtains	√			√																2
	9	Slippery floor												√						√		2

Temperature and light	1	Inadequate heating							√						√						√	√	4
	2	Inadequate heating in winter													√						√	√	3
	3	Inadequate electric supply								√					√								2
	4	Poor lighting							√						√						√	√	4
	5	Lack of light shades					√																1
	6	Poor blackout facilities							√														1
Cleanness and maintenance	1	Poor cleaning	√		√			√	√				√	√	√		√				√	√	10
	2	Lack of repair	√		√	√			√				√		√	√	√		√		√		10
	3	Inadequate supply of toilet paper			√				√								√						3
	4	Poor drainage		√	√				√		√				√	√				√	√		8
	5	Poorly maintained classrooms	√		√			√	√				√	√	√	√	√		√		√	√	12
	6	Low level of building maintenance	√		√	√		√	√				√	√	√	√	√					√	11
Outside grounds surrounding school building	1	Poorly signposted														√							1
	2	Lack of car-park space														√							1
	3	Inadequate car-park space																		√			1
	4	Inadequate signposts																		√			1
	5	Extensive grassed area surrounding school														√							1
	6	Inconsistent environment of dispersed buildings			√	√		√	√	√											√	√	1
	7	Narrow entrance to the school															√						1
	8	Widespread litter	√		√								√							√	√		5
Encouraged communication	1	Poor display of pupils' work						√					√		√								3
	2	Lack of display of pupils' work						√					√										2
Learning and teaching equipment	1	Poor quality of resources		√	√			√	√	√			√	√			√			√			9
	2	Inadequate resources for subject specialities	√	√	√		√	√	√	√			√	√	√	√	√		√	√	√	√	16
	3	Inadequate reading materials	√		√		√	√	√				√	√	√	√	√		√	√	√	√	14
	4	Inadequate audio-visual aids										√		√								√	3
	5	Inadequate computers for the work of school										√	√	√	√							√	5
	6	Aging science equipment	√	√					√	√			√									√	6
	7	Inadequate equipment for practical work (in mathematics)	√	√					√	√							√						5
	8	Uneven distribution of resources (eg. books) in subject areas	√	√	√	√	√	√	√	√		√	√	√	√	√	√		√		√	√	17
	9	Shortage of main course books	√	√	√		√	√				√	√		√	√	√		√	√	√	√	14
	10	Inadequate calculators of mathematics															√						1
	11	Inadequate book supply in library	√	√	√		√		√	√	√	√	√	√	√	√	√	√		√	√	√	17
	12	Pupils share text books											√									√	2
	13	Inadequate equipment in science laboratory	√	√	√		√		√	√			√	√	√	√	√		√				12
	14	Shortage of text books for classroom use	√	√	√		√	√					√	√	√	√	√		√	√	√	√	14
	15	Insufficient musical instruments		√	√								√		√	√				√	√		7
	16	Library stocked with outdated books	√	√	√				√			√	√	√		√			√				9
Total			29	19	39	19	24	25	38	17	11	12	30	22	43	32	38	14	19	20	34	23	

that there is no consistency in maintenance of provision for the physical environment of school.

SCHOOL DIFFERENCES

The HMI reports also indicate that for some schools, despite the fact that most schools experience a complex life with both good and poor conditions, are designated as having "good" characteristics in almost every physical factor. Tables provide some evidence that in some schools there is a tendency to show good physical environment characteristics in most of the factors. In contrast, the findings also show that some schools are poorer in their physical condition than other poor schools. In this category, school 13 in Table 4 seems relatively to be the poorest (in association with 43 poor conditions). This aspect of school differences may be gathered from HMI statements of two schools as follows:

School 1.

> "The school is pleasantly situated on an elevated site ... excellent buildings ... The buildings and landscaped grounds provide an attractive, effective and very well-maintained environment. There are a few deficiencies. Pathways and patio areas are wide and generally well placed .... The school values its links with good practice."
>
> (HMI Report, Beacon School, 1988: pp.8-10)

School 2.

> "The school is situated in a heavily built-up area .... The majority of the buildings date from 1905. For games use ... the present facilities are inadequate. The school occupies a site consisting of hard playground and grassed areas which are unattended and contain a considerable amount of litter and discarded equipment. Broken glass on loose surface pitches is a continual hazard, as is the incidence of local dogs being allowed by their owners to foul the school grounds. The two ponds contain stagnant water and rubbish. Both the old and newer parts of the building let in rain. Although the floors are maintained to a high standard, the work surfaces of several rooms are very dirty, especially in the science laboratories. At the time of the inspection a number of safety points required attention."
>
> (HMI Report, Ingram High School, 1989: pp.8-9)

From these observations it would seem that HMI identify a marked difference between schools in terms of the quality of characteristics of the physical factors.

VARIATION BETWEEN CLASSROOMS WITHIN ONE SCHOOL

From both Tables 3 and 4 it appears that there are differences between classrooms within one school. There are the classrooms with generally good physical characteristics (such as adequate size of rooms, lighting, carpeted floor, or satisfactory course text books), and there are classrooms with poor material characteristics (such as slippery floor, poor lighting or heating, aging equipments for subjects, rooms small for special subjects). Here are two HMI descriptions on classroom variations within schools:

> "The provision of classroom textbooks is reasonable in many subjects and they are well used. In English, the provision is excellent; in textiles very good use is made of a range of reference books and pupils are given a choice of books in geography. However, there are shortages of books in other subjects, for example home economics, science, CDT, modern languages and mathematics .... In general, the provision of furniture is good, it is adequate for specific subject needs and is in a satisfactory condition."
>
> (HMI Report, Witton Park High School, Blackburn, 1989: pp.10-11)

In another report HMI writes:

> "Geography is a well-equipped, well-furnished department ... Drama and Music, however, have particularly serious accommodation problems. The drama theatre, the main teaching and learning space, is unusable as a result of the seepage of foul water (and some fire damage). The music department lacks purpose-built or suitably adapted accommodation. Practical music is severely hindered by the nature, size and location of the rooms provided; soundproofing is poor and the overall standard of music accommodation is disappointing, not facilitating the work of the department."
>
> (HMI Report, Elliott School, Putney, 1989: pp.2-3)

Thus, in my view, where an individual classroom's arrangements are different in terms for the overall school characteristics, this may be seen as differentially contributory to the disruption of the schools in question.

In addition, no problem in the schools surveyed is common to all schools. From the 20 schools reviewed (presented in Table 4) – no single item of the poor physical environment appeared common in all the schools. On the other hand, no problem is only a problem to one school: i.e. the table also shows that each item of poor physical environment occurs in more than one school. It seems, thus, if one or two schools can avoid a particular problem or negative situation, that it might be presumed that such a problem is manageable and schools affected can be released from it.

Moreover, some features, regarded as good (Table 3), were commented upon in all the ten schools viewed as good. For example, maintained floor and sufficient stock of reference books in libraries appear common to all the ten schools regarded characteristically as good by the HMI standards.

DESIGN AND BUILDING

Certain items which the HMI reports constitute poor characteristics of the school environment are flaws from the original design. Rooms that are too small, narrow entrances to the school, poor signposts, poor decoration, distant sports centre, too small a library for a large school, poor ventilation, and unsatisfactory site of windows may be design errors (see Table 4 for detailed list), or may have been satisfactory at the time of the design – but now need has changed. This seems to indicate the directions in which effective remedies for some of these problems (poor school physical settings) may lie. It seems, also, to indicate that designers do not construct the schools with the school's future aims in mind. The point to note here is that such findings provide evidence and emphasise the fact that school designs do not reflect future needs, suggesting that the physical environment has to be constantly evaluated and changes to be made. Exactly this is reflected in characteristics of good features in Table 3 below, where the schools' design were single site, large rooms, library located central, stairs well suited, swimming pool available and inviting main entrance to the schools. But this seems not to be the case of all schools.

Another integrating point concerns variation in age of school buildings: some of the old buildings are reported as unattractive, and 'not fit for secondary schooling today'; and as HMI writes:

(a) "The school occupies a small site. The building dating from 1911. The internal layout is not convenient, and narrow corridors, staircases and alcoves make supervision difficult."

(HMI Reports, Leytonstone School, 1988: p,9)

(b) "The school was built in the 1930s. The buildings are still exceptionally well cared for and some rooms are carpeted. Rooms are equipped with an appropriate range of furniture and equipment in good repair, and the furniture can be readily moved to suit the activities taking place. The school has defined a number of key philosophies or aims of education."

(HMI Report, Victoria Community County High School, 1990: pp.6-7)

It is important, however, to mention in this connection that the schools also seem to vary in how they responded to the physical conditions available to them. As can be seen, some of the older buildings have also been made pleasant and attractive by the schools who care for their surroundings.

ADDITIONAL ANALYSIS

Also it needs to be noted that in both the tables (3 and 4 – which I have discussed together all through), it can be seen that the tick sign (√) has been used to indicate whether that item occurs in that school. There are, however, several blank spaces. The present study is concerned about these blanks, which seem to indicate that the HMI studies failed to investigate certain key areas. It would be equally important to know in what position these spaces stand. To attempt to find these gaps, then, the present study will inquire afresh (see Chapter 8) into a sample of schools so as to reduce the missing information on a school. This is not to say that the HMI-defined facts are insignificant, but rather that information on some aspects is missing. All schools may operate both types (good and poor) of physical characteristics.

Table 5 shows that the HMI findings gave strong support for the view that there is limited concern for the condition of the physical environment of schools. In the table, the categories are arranged in rank order and, as can be seen, of the total number of 162 items, the poor physical environment conditions appear 25.92% more numerous when compared to the good conditions. Nearly half of the percentage of the poor conditions (i.e. 30.20% of the total) relate to the school housing (accommodation/space, design of the school buildings and state of buildings). Thus it seems schools are having great problems with their physical environment conditions.

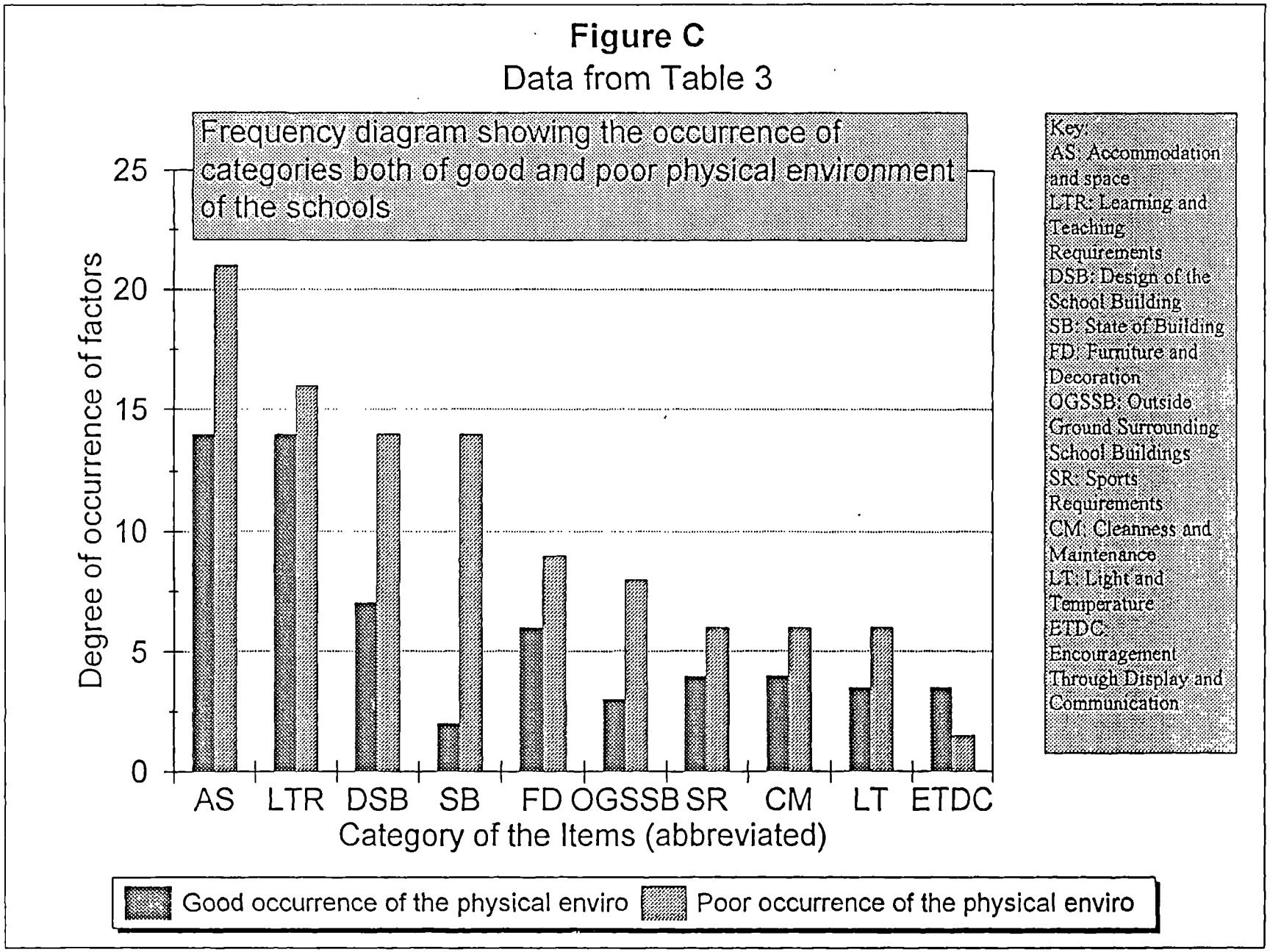
Table 5: Percentage of categories of the physical school environment characteristics identified with respect to HMI reports.

Category		Occurrence of good physical school environment characteristics		Occurrence of poor physical school environment characteristics		Total	
		No.	%	No.	%	No.	%
1.	Accommodation and space	14	8.64	21	12.96	35	21.6
2.	Learning and teaching requirements	14	8.64	16	9.88	30	18.52
3.	Design of the school buildings	7	4.32	14	8.64	21	12.96
4.	State of building	2	1.24	14	8.64	16	9.88
5.	Furniture and decoration	6	3.70	9	5.56	15	9.26
6.	Outside ground surrounding school buildings	3	1.85	8	4.94	11	6.79
7.	Sports requirements	4	2.47	6	3.70	10	6.17
8.	Cleanness and maintenance	4	2.47	6	3.70	10	6.17
9.	Light and temperature	3	1.85	6	3.70	9	5.56
10.	Encouragement through display	3	1.85	2	1.24	5	3.09
Total		60	37.04	102	62.96	162	100.0

Overall, the tables show a great percentage of significant difference between good and poor characteristics in the whole range of categories. Most of these differences favour poor physical school characteristics. The difference between the good and poor characteristics appear marginal in some categories: one of these is learning/teaching requirements which seems to identify less with poorer characteristics (12.25%). An

Figure C

Data from Table 3



interesting frequency diagram of these analyses is presented in Figure C, from which it can also be seen that only in one case (as mentioned above) are there indications of any of the good characteristics above the level of the poor conditions.

COMMENTS AND IMPLICATIONS OF THE PRESENT STUDY

The HMI surveys reviewed above have been concerned among other things about the standards of maintenance of the physical school environment. The surveys indicate that there is no consistency at all in maintenance or management of the physical environment of school. Although schools vary markedly in reinforcing this concern, the surveys show that the overall level of the standards need attention. As the HMIs' themselves state in two of their reports:

> "Lavatories are in a very poor state of maintenance and decoration and these require urgent attention."
>
> (HMI Report, Chase High School, 1989: p.15)

> "Lack of routine and preventive maintenance over a long period has resulted in buildings which regularly leak .... The leaking roofs and their unmaintained drainage systems have caused widespread damp walls, water staining, loose ceiling plaster and flaking points work in main rooms. This is undesirable anywhere and is unacceptable where food is prepared and served .... These are bad environments in which to learn, and seem to be at the end of their useful lives."
>
> (HMI Report, Lawnswood School, Leeds, 1989: p.10)

Such an observation makes plain that it seems schools are no longer a specialist setting (in the sense discussed in Chapter 2), rather that the idea is not in practice. Even the evidence that the conditions vary from school to school is not, however, indicative of good practice. The point is that the management procedure of the physical school environment is expected to be nearly uniform in all the ordinary schools, contrary to the evidence revealed (The 1944 Education Act; Elton Report, 1944; Dore, 1993; Macleod, 1993). This is a real challenge to school life, and function as a whole. What strikes me is that HMI asserts starkly and directly that the physical setting of school has a relationship with academic performance:

"We found that the premises present a number of shortcomings; There is dual use of house rooms for teaching; .... Science provision is particularly poor and constrains learning."

(HMI Report, The London Oratory School, 1989: p.7)

"The toilet facilities are exceptionally clean, the site itself is generally attractively laid out and clean from litter. Conditions within lessons support effective learning: equipment and furniture are efficient."

(HMI Report, The London Oratory School, 1989: pp.7-8)

Apart from encouraging pupils' learning, it is worth mentioning that school factors are often linked together in the literature with function of the teaching team. For example, Goble and Porter (1980), and Bayer and Chauvet (1980) make the point that what a teacher does depends to a great extent on the school physical settings in which she/he operates, and that lack of materials often means that quality teaching is made difficult. The physical setting of school can have negative or positive effects on the learning situation. Under these circumstances, it may be argued that where the "good" behaviour of pupils does exist, it is to some extent the result of good physical school characteristics. HMI defines the physical environment of school in two ways: "good" and "poor" – the question is, which of the two characteristics will a pupil chose to enter or like? In other words, how do pupils respond to annoying or poor characteristics of the physical school environment? Or to put it another way, the above judgments are still those of HMI, what do we know from the users? Even so, HMI analysed these characteristics of the physical environment of school in terms of effects on the standards of academic performance. The present study will consider it in terms of pupils' behaviour. The specific point gained from the review of the HMI reports is the identification of specific characteristics of the physical environment of the schools. HMI move to involving the physical environment of the school in research on the school out- come is also a critical matter and reinforces the need for the focus of the present study. With this in mind, in the next chapter I review information available in the literature specifically on the link between the physical environment of school and pupils' behaviour.

CHAPTER 6

LITERATURE REVIEW ON PUPIL BEHAVIOUR – THE PHYSICAL SCHOOL ENVIRONMENT RELATIONSHIPS

> "... in design and layout, the premises present a number of shortcomings: narrow corridors make movement difficult; there are too few rooms; and many are too small, so that classes are cramped; there is a shortage of storage space for pupils' and teachers' work for example in art, and for books and other possessions; there is no girls changing room; the staff room is small and there are few work rooms for teachers; there is dual use of house rooms for teaching and for dining; playing fields are up to half an hour's drive away; there are no specialist teaching rooms for religious education, classics, English, mathematics, modern language, special educational need (SEN), English as a second language (ESL); some other subjects have only one or two specialist rooms; science provision is particularly poor and constrains learning; the sixth form social area has to be used for teaching; the restricted space in circulation areas limited; the amount of work on display, although there are some good examples in a number of subject areas; and the interior of the building needs painting."
>
> (HMI, 1989:p.7)

INTRODUCTION

In Chapter 5, I reviewed the HMI reports (1988-1991) on the physical environment in British secondary schools. This chapter reviews literature relevant to the physical school environment-pupils' behaviour relationships. The value of this literature search is both to synthesise pupils' behaviour with the physical factors which the HMI's found in the schools, and also to lay the foundation for the field study. In this review, Rutter et al (1979), the HMI *Education Observed 5: Good behaviour* (1987) and the Elton Report (1989) are given special attention as key texts, because they have been very influential in the management of behaviour in British schools. In addition, HMI (1987) and the Elton Report (1989) are government documents.

I will begin the review with the key texts and then move to the other relevant literature available, in general; and some comments will be drawn at the end of the chapter.

CRITICAL REVIEW OF THE KEY TEXTS

Regarding Rutter et al (1979), HMI Report (1987) and the Elton Report (1989), what have they said about pupils' behaviour-school physical environment relationships?

A key text, one that provides a part of the first kind of field study which referred to understanding pupils' behaviour in terms of school factors is by Rutter et al, published as *Fifteen Thousand Hours* in 1979. The data of the Rutter et al study were collected in the 1970s – 20 years ago. The title of Rutter's study refers to the number of hours spent in a school by a child between the ages of 5 to 16. The study considers what effects this experience has on the child. The authors ask, do different schools make much difference? If they do, why do they? The study was carried out over 6 years. In the main, the authors examined four behavioural outcomes (more detail about Rutter et al's study will be shown as the review moves on):

a) Attendance.

b) Academic achievement.

c) Behaviour in schools.

d) Rate of disruptive behaviour outside of school.

The authors and this study use the phrase "climate of the school as a whole" (pp.103,183) to refer to a concept which is significant for the whole- school approach. The study showed how different schools achieved different results with matched children. The variations were strongly related to what happened in the schools themselves. It is the very interest in school differences which leads the Rutter team to conclude that disruptive behaviour of pupils has no strong connection with the physical environment, thereby assigning the associated problems to the non-material factors:

> "To examine the possibility that the size of individual classes might be important, we looked at the association between pupils' behaviour and the size of the class in third year academic lessons (...). No significant association was found (...) in spite of variation in class size ..."
>
> (ibid:p.104)

Here is another quote of Rutter et al's studying, indicating the position of the relationship between the physical environment of school and pupils' behaviour:

> "... with the children observed behaviour in school .... The physical features and administrative organisation ... Each was examined separately in this connection and none showed a significant association with school process. We may conclude that the buildings provided, the administrative organisation and the staffing resources made surprisingly little difference to school functioning."
>
> (ibid:pp.160-161)

Similar conclusions about the absence of an observed correlation between the physical characteristics of school environment and pupil behaviour can be found in (ibid) pages 99, 100, 102 and 103. The present study argues that this may not be the case in schools of today or all schools in Britain. Although I respect the Rutter et al study, in that its contribution to our understanding of the effect upon pupils' behaviour of the factors within school has been beneficial, in so far as issues concerning the relationship between the physical school environment and pupils' behaviour, the study was far from detailed, perhaps because the study covered so many other issues of the school life; and as such did not actually define the physical environment of the school. They only mentioned a few elements of the physical school environment, as I noted in chapter 2 of this study, the physical environment of school has many components, and not one or two can be blamed or account for all others (the Rutter et al study only identified factors of physical environment such as size of classes, age of school building, space). The Rutter et al study did not even differentiate between an old school building which is attractively decorated and that which is not. Attractively decorated old school buildings may have a different effect upon pupils' behaviour. In fact, in the Harvard University Press edition of the book (1979), an appendix has been added to explain the Rutter et al study. In Reynolds and Cuttance's (1992:p.155) terms, to obtain similar findings in groups of schools with such different student bodies would add considerable weight to the strength of the argument on the link between the physical environment of school and pupils' behaviour;

to obtain different findings would be an interesting means to extend the understandings offered by Rutter et al.

Even so, although the Rutter et al study had found statistically insignificant behavioural correlation with the schools' physical factors, the current debate still reflects the notion as, for example, Spencer et al (1989:p.233) describe that the extent to which schools can fulfil the pupils' needs depend not only upon the social-organisational but also upon physical-organisational features (as expressed in Chapter 3). In fact, Rutter et al point out that they did not investigate pupils' views on this issue (ibid: p.160). Pupils might see the same things in different lights. Rutter et al's findings of the link between the physical school environment and pupils' behaviour may not have been statistically significant, but this does not mean that there were no physical factors involved in causing behavioural problems. In a deeper layer of the understanding, it is not only the statistical significance which matters, but whether there is nothing at all within school which promote disruptive behaviour. The important role, as Fontana (1985) points out, is the identification of the influential factors and ways to deal with them. It appears from the Rutter et al study, however statistically insignificant the correlation may be, that there is certainly some evidence that aspects of the physical environment contribute to disruptive behaviour (e.g. broken or cracked windows and broken chairs, no pencils, children's work not being displayed – Rutter et al, pp.144,236). The term "weak" or statistically insignificant used in Rutter's study, it may be argued, is only another name for something which is influential: i.e. something which is influencing a small number of persons out of a large group. It does not deny the truth – the question is: why are there insignificant relations rather than no relations? There are problems of individual school circumstances as appropriate environmental factors in one school may be inappropriate in another, and this is how the Rutter et al study relates to my study.

Further, it may be argued that although the Rutter team produced a research methodology which listed very original data, there was very little data drawn on the relationship

between the physical environment of school and pupils' behaviour. Rutter et al, for example, did not study teachers' satisfaction with the schools physical environment (p.193). They did not tell us what life in classrooms with broken windows were like during winter. The Rutter team in fact agree that they did not look at the details of subject teaching conditions (ibid, p.204).

Also, the Rutter et al study did not set out to analyse specific aspects of the school environment in detail. The Rutter et al study was to determine pupils' life with relation to factors within school themselves, in general terms; and this can seem to cover a number of issues. As they write: "As with all the data in the project, our aim was to focus on school-wide practice, and on the general tenor of classroom activity and interactions in the twelve study schools" (ibid:p.62).

Methods of data collection were interviews, structured observations (see ibid:p.) and respondents were headteachers, staff and pupils. This abundance of data was classified under several more general headings (by general here, I mean total data of Rutter's study):

- academic emphasis, expressed, for instance, in the amount of homework and the total time each teacher spent teaching;
- teaching behaviour of staff (including class control);
- the use of reward and punishment during teaching;
- pupil friendliness of the school;
- pupils' specific responsibilities (for instance, the degree of formal status class representatives have);
- staff stability;
- stability of a pupil's circle of friends;
- staff organisation.

The environmental factors determined were:

- characteristics of pupil's own neighbourhood (mean socio-economic status);
- the balance of the school intake regarding socio-economic status and ethnicity.

The physical and administrative factors were:

- the state of the buildings;
- and the way pupils were divided into classes.

In a survey such as this, every aspect may not be reflected on in depth. The weak results in terms of relationships between pupils' behaviour and the physical environment of school according to the Rutter et al study might be an argument against this approach. In fact, Rutter et al conclude that behaviour was good where "general conditions" were good (ibid:p.204). What does "generally good conditions" mean? This phrase seems to suggest also a need for hard data on the physical school environment-behaviour link. In fact, the factors which the Rutter team associate with the phrase "general conditions" includes, amongst others, delivery of lessons, behaviour, site of school buildings, teacher-child ratio, teaching staff, exams outcome, the ethos of the school as a social institution, building conditions. Alternatively "general conditions", according to some recent writers (Sayer, 1983; McGuiness, 1989; Jones and Hones, 1992), is another name for a whole-school approach, in which the physical setting might yet again be an element.

The HMI (1987) *Education Observed 5* starts with the premise that "good behaviour" is a necessary condition for effective teaching and learning to take place (p.1) and draws its conclusions from a number of specific visits to schools where high standards of behaviour were claimed to exist. The HMI reached some conclusions on the issue of physical environment, that the behaviour of pupils in a school is influenced by almost every aspect of the way in which it is organised and how it relates to the well-being and learning requirements. The HMI report asserts that:

> "The physical environment provided by the school has a considerable effect on pupils' behaviour. Where classrooms are drab and uninviting, or poorly fitted for the activities taking place in them, pupils' morale and behaviour sometimes deteriorate as a result."
>
> (p.11)

HMI describes how disruptive behaviour can develop in an unsatisfactory environment – behaviour for which teachers and pupils have been blamed. If pupils have to show positive attitudes, HMI notes that the physical conditions, as basic to the organisation of schools, should be increasingly be recognised as influential. For HMI, inadequate maintenance of the physical conditions of school is likely to lead a downward spiral with pupils doing further damage to the environment because they see that it is not cared for. HMI listed several factors, all of which are physical conditions (though the assertions are made without evidence) which ought to be put right if behaviour in school has to improve:

- toilets to remain unlocked during school hours;
- improve poor building conditions;
- increase the size of narrow corridors;
- clear points of congestion which prohibit an easy flow of traffic;
- improve quality of furniture fittings;
- decorations and repair;
- adequate and appropriate resources for learning.

These are the same things which the Elton Report (1989) focused on.

The Elton Report (1989) was, as might be the case in many people's minds, the enquiry upon which the report is based (discipline) and mainly concerned with disruptive behaviour in schools. Thus, in many respects, it is concerned with ways of preventing disruptive behaviour and sees the physical environment of school in this light. This is

what the Elton Report had to say, which is opposed to the conclusion of Rutter et al (1979) discussed above, that

> "... there is much clear evidence of a link between shabby, untidy classrooms without posters, plants or displays of pupils' work and poorer standards of behaviour."
>
> (p.115)

The Elton Report suggests that schools with inadequate maintenance of the physical environment entirely altered the individual's relationship which will not only have a disturbing effect on pupils' behaviour but severe disruption and damage to staff morale or teachers' consistency (pp.117,118). Regular structural maintenance, redecoration, adequate space for circulation between rooms, litter bins regularly emptied, displays of pupils; work, school atmosphere with carpets, the prompt repair of minor damage, clean rooms and orderly classroom arrangements may improve the standard of behaviour in school (pp.90, 116-118, 291-292). For the Elton Report, appropriate behaviour from pupils requires pleasant physical conditions. The Elton Report (Ibid:pp.115-119) also regrets that research into the relationship between the physical environment and behaviours in school has not been developed, particularly in the United Kingdom (UK).

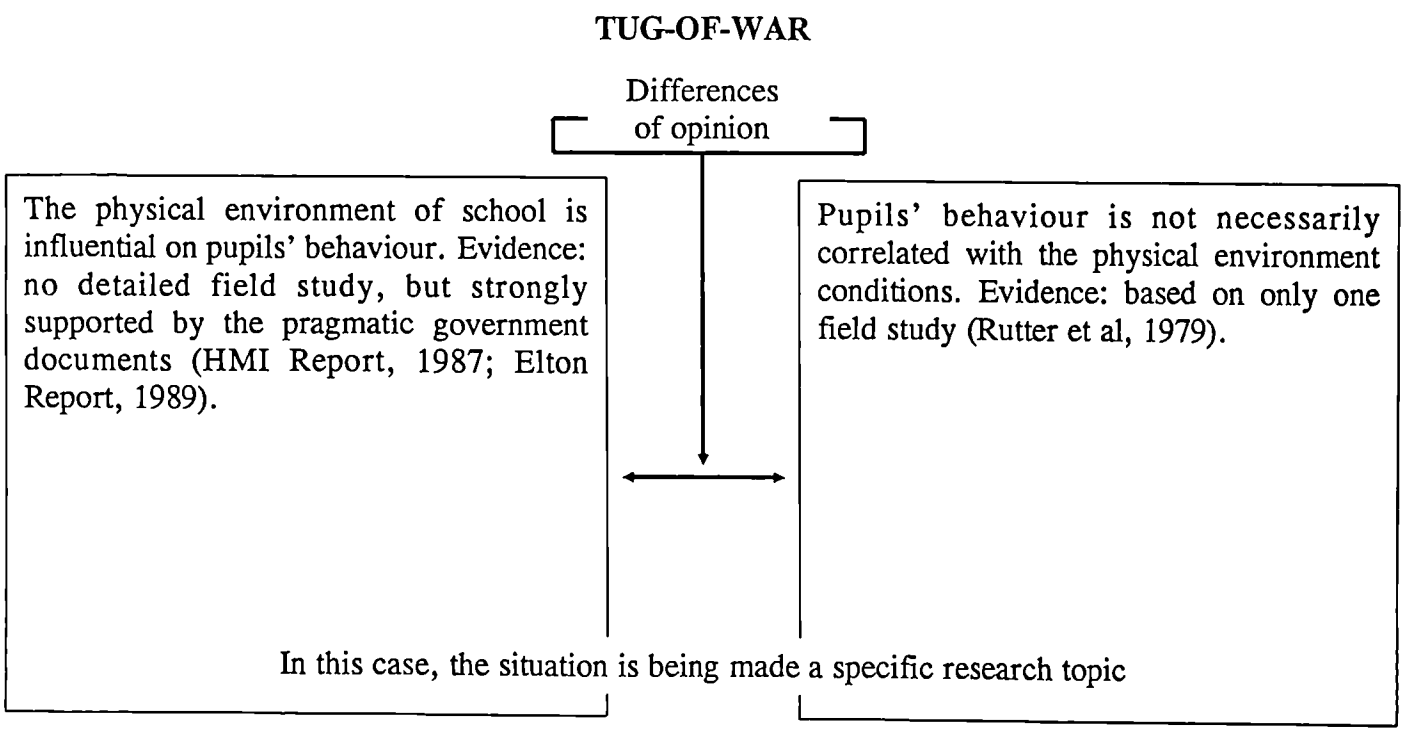
Taking the two reports together, the Elton Report is essentially a responsive, pragmatic, government driven document. The same is true of HMI *Education Observed 5*. Both documents take as their premise that learning can only take place in situations where 'good' behaviour is the norm and where the physical environment is adequately provided and maintained. It is not that disruptive behaviour is seen as the fault mainly of the pupils or teachers, but it is taken for granted, for example, that attractive and efficient environment are necessary features of schools and that the dispensation of these in a fair and rational manner will help to establish a 'good' child developing and disruptive behaviour prevention environment.

Still, it must be pointed out that these two reports are not based on empirical data – these are reports based on surveys. This distinction is drawn by Evans (1988) who stated that empirical data is based on a 'scientific approach', hypothesis formulation, defining indicators and concepts, selecting cases, collecting information and manipulation and interpretation. On the other hand, he referred to survey data as data collected from a sample of people specifically by the use of questionnaire with a view to making assumptions and/or decisions about some issues concerning the wider population - he goes on to point out that surveys represent the chief application of sampling, while the empirical data may be based on individual issues. Although they tell us what should be done with the school physical setting to improve behaviour in school, and show us particular evidence of an incident, the main contribution of their work is as a pathway to knowing what the real situation is like in the schools. It should be pointed out here also, that evidence obtained from where the incident of behaviour/poor conditions of the physical environment occurs is an important part of the whole-school approach. The question 'what is the response of pupils/teachers to their physical setting?' asks for information which must come from within that school context.

Now, if we take all three studies (documents) together, Rutter et al (1979), HMI *Education Observed 5* (1987) and the Elton Report (1989), I would argue that the problem is the two different conclusions; that the relationship in question is (1) insignificant and (2) a matter of serious concern and these particular views merit detailed investigation (see Box 2). Such differences of position appear to suggest that there is a need for a fresh enquiry, in which consultation with users of the environment about their views and actions will be helpful.

It may also be argued that in Rutter et al's study, there was very little data drawn on the relationship between the physical environment of school and behaviour of pupils because the schools in the study were within the same educational authority (London Secondary Schools),and so variation may be very great in comparison with schools in different areas

Box 2: The differences of opinion on relationships between pupils' behaviour and the physical environment of their schools These two cells may not be a contimuum



At this point, the general theme becomes confused. That is, not knowing which opinion to rely on. Perhaps finding satisfactory answers to behavioural issues in schools will in part require a measure of agreement between all those concerned in this field. It is also for this reason that the present research has to develop.

of the country, Great Britain (Rutter et al:p.130). Situations may vary from place to place. Conducting of field work in a particular sample area cannot answer for all schools and for life.

Another question may be asked: Are the situations in the schools, particularly the physical conditions, still the same as Rutter et al analysed? Although past information can be extremely useful in confronting present problems and should be consulted, no past idea can ever be wholly relied upon in a changing world. Also, the pupils in the 12 London schools which Rutter studied are now different. It would seem reasonable to understand the position of the schools today. The authors agreed that their study was an avenue which would require further investigation (Rutter et al, 1979:p.97).

A further comment on the Rutter et al study conclusion is that, although the results suggested a weak link and statistically insignificant correlation between the physical (which they define as the size, whether the school was split site or not, the material resources and the age of the building) environment of school and disruptive behaviour, there is no similar study which arrives at the same conclusion. HMI, *Education Observed 5: Good behaviour and discipline in schools* (1987), and the Elton Report (1989) return to assert that the physical environment of school has an influence on behaviour. That is, both these pragmatic reports assert the physical environment of school and pupil behaviour (Elton Report, 1989).

Although Rutter et al draw conclusions on the physical environment of school-pupils' behaviour links from field study, this is evidently but from one study and it is a study that dates 15 years back. Situations in schools may have changed over the years.

The two government reports, although they have received greater attention, are not field reports based on systematic research (for example Wheldall, 1992 argues that the Elton Report was not built on 'natural practice' by giving individual pupils/teachers opportunities to reply to an account of their activities and views, and then have these to constitute the document).

On the whole, I think it is not only the differences of opinion that needs to be dealt with, but also the fact that the studies have a number of hypotheses that need to be verified by means of specific "operational" (functional relationships) research.

For the purpose of the present study, the three studies, the Rutter et al study, the HMI (1987) and Elton (1989) reports, are regarded as important as pointers along the road to a piece of empirical analysis. The empirical data will investigate the position of the relationship. Rutter's study is important because it draws the conclusion from data, while the HMI (1987) and Elton Report (1989), though without proper systematic collection of evidence, also importantly acknowledge that school factors, in particular the physical environment/behaviour, should be seen in relation to one another. The relationship in question (in the present study) is interpreted to mean that poor physical conditions in school reinforce disruptive behaviour in pupils. In the same context, I think, to a large degree, that discipline success would depend upon the quality of the material conditions available to the school. Let me give one example here: say, coming late in class is regarded as disruptive (this is very well illustrated by Lawrence et al, 1984). But what if a child's late coming has been caused by queuing to use an outside toilet? If the school does not have enough toilets to comply with the needs of discipline – would the school not have failed? The essential question here is, what might the position of discipline or standard of behaviour be in a school that is not efficiently equipped or maintained? And how can we know whether such problems exist or not? As the Elton Report (1989) suggests, there is no single or simple solution to the problems of disruptive behaviour in school. However, an acceptable piece of research will contribute to improving the standards of behaviour in pupils (ibid, p.195). According to the Elton Committee, the physical environment of school plays an important role.

Critical view on the methods of research of the three key texts

One of the most important points to note about these three key texts concerns the research methodology of the studies, as Box 3 explains:

Box 3: A comparative view on status of the Rutter Study, the HMI Report and the Elton Report.

Approach		Rutter et al study (1979)	HMI Report (1987)	Elton Report (1989)
1.	National sample	No	Yes	Yes
2.	LEA confined study	Yes	No	No
3.	Government directed study (involving government officers)	No	Yes	Yes
4.	Non-government directed study	Yes	No	No
5.	Public supported study	Yes	Yes	Yes
6.	Private study for marketing purposes (publication purposes)	In part	No	In part
7.	A survey	No	Yes	Yes
8.	Ethnographic related study	Yes	No	No
9.	A study carried out by a body of government appointed for inspection of schools – on a long term basis	No	Yes	No
10.	A study carried out by a committee of enquiry into discipline in schools appointed by government – on a short term basis	No	No	Yes
11.	A study carried out by a group of academic researchers in the field of behaviour management in schools	Yes	Yes	In part
12.	A study carried out by a group composed of competent teachers, lecturers, advisers with local education authorities, specialists in major aspects of education and experts with work experience in commerce or industry	In part	Yes	Yes
13.	A particularised study	No	No	No
14.	A multi-dimensional study	In part	In part	In part
15.	A semi-multi-dimensional study	No	Yes	Yes
16.	A study result endorsed by the supreme authority in the state	No	Yes	Yes
17.	A study result endorsed by other researchers or writers	Yes	Yes	Yes

It can seem clearly indicated in the Box that all three studies were not specifically physical environment-behaviour research. In many ways the studies are different: in, for example, methods, areas covered, and length of time of study. Thus, no doubt, the findings are in disagreement, interpretations in conflict and conclusions very different. This suggests that the studies can seem to be in some way a source of problem provocation for fresh but specific research.

Despite all these criticisms it must be said, however, that the objectives of these studies were not the same. The Rutter et al study (1979) was to investigate the reasons why there

are differences between schools in terms of various measures of their pupils' behaviour or attainments, and to determine how school influences children's progress; the HMI Report (1987) was a result of their normal duty of inspections, but this time on how to promote good behaviour; the Elton Report (1989) was to inquire into discipline in schools in England and Wales and to make recommendations. An interesting point to make of the studies, is that they did not find it just as easy to reject the physical arrangement of school. This is important, in particular because it reminds us that the physical environment is a factor of paramount importance which functions in all aspects of school life. At the same time, the emphases make it abundantly clear that no one should underestimate the need for proper understanding of the physical environment of school and influence it may bear upon pupils' behaviour. In addition, it should be noted here that because of space limitations, some details on the methods of research used by HMI (1987) and Elton Report (1989) are given in Appendix 9.

THE GENERAL REVIEW SECTION

It should be noted that the review of key texts ends as above. It should also be noted that the key texts were decided upon based on the following reasons: the Rutter et al study (1979) was selected because it is the first research in Britain which shows that irrespective of pupils' home backgrounds, schools themselves may be a key factor in determining whether or not certain pupils become disruptive and, in particular, the research has touched on the relationship between the physical school environment and pupils' behaviour; the research has also been one of the most famous in Britain (Tattum, 1986; Elton Report, 1989; Charlton and David, 1993). The HMI Report (1987) and Elton Report (1989) have been selected because they are the most recent government driven documents for use in the schools which recognise the influence of the physical school environment on pupils' behaviour; these reports are frequently referred to in books and journals concerning discipline in schools (Awiria, 1992; Wheldall, 1992; Charlton and David, 1993; DFE, 1993). This section reviews a range of additional references relevant

to the study (not necessarily British studies). In the review, items are addressed individually, since there seems no study available that has ever discussed the items together under one single heading as 'The physical school characteristics-pupil behaviour relationships'. It should also be noted that the review is treated here as a reference. In other words, the position of the present study, in part, is based on them.

SCHOOL BUILDINGS AND BEHAVIOUR

As maintained earlier (in chapter 2 and 4), school buildings are of great importance to the understanding of pupils' behaviour. Pupils' behaviour is sometimes considered to be a consequence of school building conditions. As HMI (1987:p.13), Coffield (1991:p.79) and Reynolds and Cuttance (1992:p.48) state, standards of pupils' behaviour may deteriorate unacceptably and pupils may dislike a school as a consequence of separate sites, unsatisfactory/unattractive buildings, narrow corridors or stairways and 'damage to school premises which cannot be said to have caused the damage'.

For instance, Goldman's (1961) study set out to discover which factors distinguish schools which suffer high damage from those with little. After interviewing 367 teachers and 1,170 pupils from 16 schools in Syracuse, New York, Goldman concluded that teachers in high rather than in low damage schools identified less with their school, they were less enthusiastic about teaching, they considered that parents were uninterested in or unfavourably disposed toward the school, and they were more concerned with impersonal factors like the administration, age or location of the building rather than with personal relations and their professional effectiveness. Pupils in high damage/unattractive schools were relatively uninterested in academic work, did not identify with the school and had higher drop-out and truancy rates. Both teachers and pupils reported that the most significant factor in the causation of misbehaviour is an attitude of boredom in students, and this finding has an important implication in that dislike of school would seem, in part, to appear to be associated with the physical

condition of school buildings. However, negative attitudes to school might not only be evidence of indifference or a feeling that the building conditions are unattractive or unsatisfactory to the desires of the student, such dislike of school may also result, in part, from a lack of rapport between students and teacher. But as these findings have been the response of students, such is in itself a necessary way of understanding behaviour – and thus implies evidence.

Larson (1965) conducted a study to determine any positive or negative effects of removing windows in classrooms. To conduct his study, Larson used two similar schools serving kindergarten through grade 3. The study was conducted for three years. One school was designated the control school and was left with its windows intact for the entire period. The experimental school had regular windows the first year and the third year of the study. In the second year, however, the windows were replaced with opaque panels. Each year, students and teachers were asked about the school as an "physico-environmental" setting and how satisfied they were with it. In addition, class-performance (like HMI's report) records were kept for comparisons. The students were generally not concerned about the presence or absence of windows, but younger children did show a preference for windows. Teachers, on the other hand, were more satisfied with the windowless conditions and commented on the lack of distractions and increased flexibility with windowless walls. Student performance was virtually unchanged across the conditions. The author's conclusion was that no learning deficits were in evidence due to windowless classrooms. He states that. when taking the performance data into consideration with the teachers' and pupils' comments, if windows are not relied on for light or ventilation, it should be safe to do without them. Such a practice would, in my opinion, be initiated with much hesitancy on the part of school planners and administrators, however, and would probably be met with criticism by others, such as Sommer (1974), who would maintain that the removal of windows is yet another way of dehumanising buildings. But, it seems, windowlessness is unhygienic

and implies a reduction in the health of other people. I am referring to this as a strength of my field study.

In their study of disruptive behaviour in school, Lawrence et al (1984:p.151) and Frude and Gault (1984:p.36) also offers a comment that movement about the buildings may prove slightly time wasting to pupils' and result in their not being able to arrive in time for lessons. They suggest that for misbehaviour prevention in schools, evaluation of preventive measures needs to include all conditions within the school facing pupils. Corroboration of this suggestion comes form an architect's attempt (Wawrzynski, 1984:p.293) to combine social and, in particular, design elements in a preventive scheme in Oldham. But only physical modifications were introduced, and that without consulting the tenants, while radical changes in management were largely ignored. He pointed to the need for preventive measures (caretakers, repair of building, change in site location) to be introduced as well as defensive measures against damage.

Also, when anti-damage to school properties projects (such as the initiative in nearly 60 schools in the Strathclyde region, UK) listen to the views and constructive suggestions of pupils, what is immediately apparent is the quality of their thinking, their comments on change and their realism. Pupils at St. Gregory's Secondary School in Glasgow, for example, argued that "if they are to have pride in the school, they want to feel that others are prepared to invest in maintaining the basic school structure and that the general drabness of the school building makes it a depressing environment in which to learn" (Crime Concern Scotland, 1991a:p.9). Many pupils at Possilpark Secondary School, again in Glasgow, "are concerned about the poor image of the school to outsiders and the effect this might have on their employment prospects" and they do want to see change, especially if those concerned with school policy contribute to an all-round improvement of the school (Crime Concern Scotland, 1991b:p.9).

BEHAVIOURAL STUDY ABOUT LIGHTING

Lighting conditions have also been considered to affect pupils' behaviour. As Bell et al (1992), in their study entitled *Environmental Psychology*, state: "different lighting conditions may have a subtle effect on the social behaviour of college students", and they regret that "there is relatively little information regarding this effect", even further arguing that available information of lighting-social behaviour seems contradictory. Evidence for this argument is offered by George et al (1973), who reported that when college students who were strangers to each other were placed in a dark room for several hours, considerable verbal and physical intimacy occurred between them. Darkness and anonymity had apparently removed some customary barriers to intimacy. More recently, Butler and Biner (1987) used a questionnaire format to determine the lighting preferences of a large sample of college students. Participants in the study reported their preferred lighting levels, the importance of these lighting levels and the degree to which they desired control over the lighting levels. Having the proper lighting level was rated as most important in instances in which individuals report preferences for either a rather dark or very bright lighting level. Predictably, control over the level of lighting was more important in some "physico=social-environmental" settings than others, and particularly important for those expressing strong lighting preferences.

According to the HMI reports (1988-1991), lighting levels in the secondary schools were classified as good or poor, and, thus, affected academic performance and had no link with behaviour. Now the above finding supports behaviour-lighting links. Of course, at a very basic level, lighting affects performance by making it harder or easier to see what students are doing. At one extreme, the absence of light makes it impossible to take an exam because students (pupils) would not be able to read the questions. On the other hand, they may not be able to see the questions on the exams if there is too much light.

Thus, it would seem that the effects of lighting is a rather complex issue. Not only does one need to consider the standard of academic performance but also pupils' feelings and

conduct in the situation, and findings of this kind will, in fact, be described in the main results of the present study.

HEATING AND BEHAVIOUR

Another kind of argument is that heating (temperature OR weather) conditions in schools could affect the behaviour of students, which Heimstra and McFarling (1978) argue is an important issue to consider of secondary school effectiveness. Interestingly enough, some researchers find that high heating complicates working conditions, and can affect task performance. Lofstedt, Tyd and Wyon (1969) conducted a study involving a variety of elementary- school children in four different experimental settings: a climatic chamber, a language laboratory, an observation classroom and an ordinary classroom. The students were required to perform a number of different school-related tasks in each of the settings at varying temperatures. The students in the climatic chamber solved addition and multiplication problems and completed tasks involving memorising. The language-lab students learned words fro lists. The students in the observation classroom engaged in reading, vocabulary lessons and math operations. The students in the ordinary classroom were also tested with arithmetic problems. The temperature in the settings ranged from 21 to 27°C. The results indicated a general tendency for performance on the tasks to decrease as a function of increasing temperatures. Also, in some cases, poorer students were more adversely affected by the higher temperatures than were the better students. This study, too, results in academic performance paying little attention to whether or not such principles are applied in a somewhat behavioural management. The reader will recognise that much of the discussion in the earlier chapter on HMI findings is relevant here.

Pepler (1972) studied climate-controlled (air conditioned) and nonclimate-controlled schools near Portland, Oregon. In nonclimate- controlled schools, academic performance showed more variance (i.e. wide distribution of test scores) as temperatures rose. However, at

climate-controlled schools, such variability did not occur on the warmest days. Apparently some students suffer more than others when heat waves hit the classroom! Support for these findings has been reported by Benson and Zieman (1981), who claim that heat hurt the classroom (both academic and behaviour) performance of some children but actually helped the performance of others.

Nonetheless, it should be emphasised that it should be increasingly evident that the way surroundings (physical settings) are experienced is as important to understand by listening to users. The missing point to assert here is whether or not exposure to coldness or inadequate hearing during the winter months could have powerful attitudinal effects that occurs within secondary schools of pupils. Anyway, it would be premature to make a firm statement about the need for this task, since this is the subject of ongoing research.

TOILETS IN SCHOOLS AND BEHAVIOUR

Toilets in some schools appear to have an almost irresistible condition in which children might feel upset, while intentionally disruptive behaviour undoubtedly occurs. In other words, poor toilet conditions may result in certain behaviours. The evidence from field study is interesting.

A survey by the NUT (in National Survey: *The Teachers*, January/February 1992), although its scope was to examine health and safety regulations in schools, is an interesting example of what the physical environment of school can do to pupils' lives, the evidence is presented here regarding toilets. The survey covered 2,000 schools in England and Wales – primary, middle and secondary schools. The survey used questionnaires as its method of study. The questions asked in the survey included: number of toilets for pupils in the school; number of wash basins; whether there were outside toilets and hot and cold water; and whether soap and toilet paper were always available, although we are not told in the study as to whether teachers go into pupils' toilets on a regular basis. Teachers filling in the questionnaire were also asked whether hand towels

were changed regularly; how many times a day toilet areas were cleaned and how they would describe the general cleanliness and maintenance of the toilets and sinks in their school. The findings, which represent 8.5 per cent of LEA-run schools in England and Wales, show that sanitary provision in schools is falling to dangerously low levels. Some of the results found were:

- 53 per cent of secondary schools did not have enough toilets to comply with the Education (School Premises) Regulations. 26 per cent of primary schools did not have enough toilets for under five year olds.
- 35 per cent of primary schools and 28 per cent of secondary schools did not have hot and cold running water in outside toilets.
- One third of respondents in both primary and secondary schools did not accept that toilet areas were cleaned adequately.
- 21 per cent of respondents in secondary schools thought the general cleanliness and maintenance of the toilets and sinks in their school was poor to very poor.

The figures go some way towards giving some evidence about toilet conditions worsening for an increasing number of pupils in British schools. Of special importance to the present study (behavioural related) is the comment that children queue to use the toilets, particularly any outside toilet (see Figure No.D). The striking things about school children queuing to use toilets is that it may make them turn up late for lessons, which can be disruptive, particularly if the lesson is in progress. As Stone (1990:p.152), for instance, believes "siting class bases near the toilet areas will make it easier" for staff to cope with "children who have toileting problems". This evidence also seems to indicate that the physical school environment has an effect not only, say, on academic work as presented by the HMI reports (1988-91), but also other factors such as health and behaviour could be another (for example, to assume turning up late for lessons indeed is, as Stone (1990) stresses, disruptive – which would require a way to reduce its occurrence).

Figure No. D: Children queuing to use an outside toilet



Children queueing to use an outside toilet — an all too common situation in many schools in England and Wales, according to the union's survey.

(Source: *The Teachers*, January/February 1992:p.10)

MATERIAL RESOURCES AND BEHAVIOUR

Westbury (1973) argues that the problem of material equipments can have significant repercussions for the practice of teaching. Most importantly, as he points out, limited equipment tends to foster a reliance on the available personal resources as the means for managing the class, that is, teachers' charisma and the developments of personal relationships with the pupils. Under such circumstances, one can, he said, hardly blame the teachers in such a school, for certain disruptive behaviour of pupils. When material resources diminish, as they do according to the HMI reports, teachers thus may find themselves faced with increasingly behavioural problems arising from needs of different groups of students or individual students. A growing number of literature (HMI, 1987; Elton Report, 1989; Stone, 1990) is assuming that the teaching/learning resources of individual schools have an important bearing upon pupils' behaviour. It is part of the

"physico-environmental psychology" approach to provide ample and special information about the material resources and its relationships with behaviour in school.

To give an example of the growing literature, the Lawrence et al study (1984:pp.48,50) shows that irrespective of teachers' behaviour and certain factors of school, the material resources for teaching/learning may sometimes be a key factor in determining whether or not certain pupils behave disruptively or unco-operatively. Galloway and Goodwin (1987:pp.97,157) point out that behavioural problems against teachers are often the reaction by pupils to expose, in part, material resources gaps in the organisation of the schools. Denscombe (1984:p.73) concluded from his observation and interviews with staff in three London comprehensive schools, that the classroom behavioural problems were regarded by teachers as problems of resources rather than problems of teachers' style of teaching/behaviour. The cause of problem behaviour, in other words, was seen to lie with material resources, not the teacher nor the pupil.

Frude and Gault's (1984) study, although being ten years old, has challenged the tendency of researchers to attribute disruption to a variety of factors such as home background, pupil-personality, teacher-pupil relationships but to omit material resources for teaching/learning to pupils' needs and how pupils think of it as a causative factor. This omission of the interactional components prevent researchers seeing disruption in terms of "socio-academic" episodes which form entities in themselves and which can be broken up into constituent units. Frude and Gault go on to complain that teacher-pupils' interaction may be affected by material resources, and that teachers may find themselves limited by lack of materials, which could limit the activity of the teacher. The authors regret that no systematic research has been carried out on the physical and psychological characteristics of children who are identified as being regularly disruptive (ibid:p.181).

The reasons for shortage of appropriate/inadequate material resources, and some of the effects, have been well documented in the HMI reports (1986) on the effect of local authority expenditure policies. Where resources are poorly provided and maintained,

whether at school or classroom level, pupils' behaviour is often adversely affected. For example (as the report points out), if there are too few text books, or pupils are not allowed to take them home, progress is hampered and classroom activities are constrained. Pupils can easily become bored and restless, and there are more opportunities for destruction and dissension. Where teachers' management of material resources is efficient, and pupils are made responsible for using them sensibly, poor behaviour is much less likely.

One of these developments has been documented by the initiator of the review of school self-evaluation programme – Peter Thompson, former head of Wheatcroft School, Scarborough. He and the staff wrote a brief report of their work after it had been in operation, as he claims, for four years (Thompson, 1987). He argues for a whole school approach to appraisal. But what is interesting to the present study is the point that, for the procedure to be effective, every aspect of school has to be involved and, among other things, never to exclude material resources if it is to be seen to be a means of improving the quality of education. According to Thompson, quality of material resources is important in considering educational attainment and factors creating major dilemmas for the teachers. It applies particularly as teacher support, apparatus to be provided for preventing the difficulties which directly disrupts teaching/learning or produce tension in day to day practice. Thompson comments why material resources cannot be approached to improve on teacher-pupil classroom relationships. Again, Watkin and Wagner (1987) from their review on school discipline, suggests that a number of material resource needs present problems (poor quality or inadequate). This belief, in turn, is faced by the pupils and brings about under achievement.

In their recent report, Brown and McIntyre (1993) concluded from self-management recording of 5 secondary and 11 primary teachers that disruptive behaviour in pupils in part was related to the following conditions of material resources:

- inadequate computers;
- shortage of main books;
- inadequate equipment in science laboratory;
- the pupils' work not all displayed;
- inadequate materials for teaching mathematics.

This bears some close similarity with the illuminative work of Edwards (1973) which, although written twenty years ago, showed that pupils can demonstrate unacceptable behaviour more frequently because of:

- shortage of books in school library;
- sharing materials in practical work;
- aging books and science equipment;
- insufficient music materials.

Although the elements of this explanation may be taken seriously, however, the trouble with these and other statements are that they are based on the answer to self-reports of 16 teachers or observation of two-to-three schools and, worse still, their study depends on a single, or perhaps two, methods, like the study of Denscomber (1984), who only concluded from his own judgment through observation and interviews with teachers that it is children who are faced with these problems and they should be asked for their feelings if changes have to be made. On the contrary, the statements may be accelerating a great deal, but this can only be done by concentrating on the next step (field study) ahead.

FURNISHING AND BEHAVIOUR

Furniture, its arrangement/quality, and other physical aspects of school rooms have also been criticised. Some individuals (such as Watkins and Wagner, 1987:p.88) feel that teachers' fatigue need be heavily influenced by furniture arrangements. In addition, Bell

et al (1992) have noted that certain furnishing conditions, even though they may not paint the whole picture, could have negative behavioural results on pupils. A warning word here:

> "Where classrooms are drab and uninviting, or poorly fitted for the activities taking place in them, pupils' morale and behaviour sometimes deteriorate as a result."
>
> (HMI, 1987:p.11)

> "Seating plans are an example of how the physical setting and the social structure of classrooms interrelate."
>
> (Watkins and Wagner, 1987:p.89)

Research designed to refer to these types of claim are rare. However, Sommer (1969), Deasy (1974), Richardson (1967), Becker et al (1973) and Koneya (1976) provide some insight into the question of physical classroom conditions/furnishing and students' behaviour.

Richardson maintains that traditional arrangement of the classroom – students' desks in straight rows facing the instructor – may not be the best way to encourage students' involvement and satisfaction. She cites a number of reasons: (1) students may not be able to see the instructor or what the instructor is doing because other students may inadvertently block their view; (2) many students may be so far from the instructor that they feel isolated from the class and its subject matter; (3) students may have difficulty seeing and hearing other students. If a person in the front row answers a question, students in the rear may not be able to hear. Moreover, it is difficult for the front-row student to gauge the classes reaction to the answer. Students in the rear answering a question also cannot see and hear their classmates' reactions; (4) the dominant role of the instructor is accentuated by the use of furniture different from that of the students and instructor; (5) the row-by-row arrangement inhibits "action" types of lessons. Richardson, thereby offers several alternatives to the traditional furnishing arrangements that would encourage class participation, one suggestion is to arrange the desks on one or more circles or semicircles. She also notes that substituting large tables for desks would enhance class

unity and co-operation. Although Richardson's opinions were derived from observation and represent no more than anecdotal evidence, her basic ideas are supported by Sommer (1969), who investigated seating arrangements, room properties and class participation. The specific method used was observation, which took two different forms: 1) furniture mapping and 2) behavioural mapping.

Sommer used six rooms in his study. Four of the rooms had the traditional arrangements of straight rows. Two of these rooms were student laboratories containing the usual equipment in addition to the fixed tables. The other two traditional rooms differed in another dimension: one was windowless, and a wall of the other consisted of windows. The remainder were seminar rooms, with tables in a square in one of the rooms and on three sides in the other. Observation of students during regular classes showed that a higher than average number of students per session in the straight-row arrangements participated in class discussions. However, the absolute number of the statements per session was higher for the classes held in the seminar rooms. Sommer also notes that students said they did not like to have their classes in the laboratories and windowless rooms. Also relevant to the present investigation is a study by Becker et al.

The Becker et al study (1973) was conducted in three large college classes (number = 282) at the University of California at Davis. The study took place near the end of a quarter when seating patterns were well established. Students were given a questionnaire which inquired (among other things) about their grade in the course, their liking for the teacher, and the perceived similarity between the teacher and themselves. Students were also asked whether they were sitting in their usual place and those who were not (approximately 30%) were eliminated from the study. Seating position was significantly related to the reported grade in the course, with students sitting in the front reporting higher grades than students sitting in the back. There was also an interaction between front-back and middle-side location, indicating that students sitting in the front and centre portion of the room get the highest grades. In addition, front-back seating was related to

liking for and perceived similarity to the instructor, but only when students in the extreme front and back of the room were considered. Students in the front liked the teacher more and saw him or her as more similar to themselves than did students in the rear. There are at least two possible explanations for these particular results. The 'physico-environmental' hypothesis states that seating position has a determinative effect on grades and liking for the teacher. There are several reasons why this might be the case. Students seated near the front of the room can probably see and hear better. Because participation is more convenient for them, they are more likely to become involved in any classroom interaction that takes place. They also fall more readily to pay attention out of courtesy to their teacher, while students in the back of the room are freer to daydream or talk with one another. However, the fact that Becker et al's subjects were free to choose their own seats suggests self-selection as an alternative explanation. The self- selection hypothesis states that, consistent with the stereotype, students who select the front and centre seats are brighter and more interested in the course in the first place. Becker et al seemed to prefer this explanation when they discovered, in a later study, that students share the stereotype that those who sit up front get better grades and like the class better. They state that the fact that students are aware of the relationship of seating position to grades and attitudes suggests:

> "... that students selected out (and think the teacher perceived this selection) areas of the room according to such factors as their desired level of involvement and their motivation to pay attention."
>
> (ibid:p.524)

Of course, the Becker et al study also provides alternative explanations of Sommer's earlier data on seating arrangement and class participation. Koneya (1976) attempted to test classroom physical aspects in behavioural perspectives. He began with a behavioural assessment of each student's participation rate, taken on the second day of class with students seated in a circle (thereby presumably equalising their opportunity to participate). He then asked students to indicate their seating preference on a diagram

with the self-selection. Students classified as high verbalisers on the behavioural measures were more likely to choose front and centre seats than low verbalisers (with moderate verbalisers eliminated from the analysis). Later he randomly assigned students to seats in a straight row arrangement and measured class participation again. Consistent with the 'physico-environmental' point of view, both high and moderate verbalisers participated more when they were assigned peripheral seats. The interaction rates of low verbalisers did not vary as a function of seating location. Koneya's study, therefore, seems to suggest that, at least for high and moderate differential opportunities for participation that the various seating locations proved. However, the possible confounding of the initial measure of participation makes the study difficult to interpret.

In a similar analysis, Deasy (1974) observed students' use of outdoor space in an American state (California). The study was not aimed at just any outdoor space, it was highly focused at the entrances to major buildings. The study also observed that group study was a common practice and that where it was possible to do so, many students ate snacks or consumed beverages while studying. On the basis of the interview data that revealed the serious time pressures on these students due to off- campus work and commuting, Deasy found that studying occurred wherever the students happened to be – sitting, standing or learning – it was a more efficient way of using small segments of free time than going to the library. The reasons, however, are unimportant. Thus, taking the entrance of the forecourt of the student centre as a behaviour setting, it was possible to make several decisions about the design characteristics it should have as a direct result of this observed studying behaviour. Since the student centre was clearly a major destination, it should be assumed that the entrance area would be used for study. In that case, some provision for convenient and comfortable study should be made: there should be comfortable benches and the benches should be provided with tables for spreading out books and papers and tablet arms for writing on; since eating was so customary a part of study, there should be outdoor food services in the area; concerning group

formation, as opposed to bench arrangements, this factor is just as decisive on a college campus as it is in a public park. As a result, it could stipulate that the seats and benches in the entry plaza should be arranged in facing pairs and re-entrant angles to permit easy group study. Nevertheless, the results of these studies suggest that the physical characteristics of a classroom, particularly position of furnishing, are important determinants of the behaviour occurring there.

CROWDEDNESS AND BEHAVIOUR

Crowding is a popular social issue that is currently stimulating a great deal of research. Altman (1975) has proposed that crowding occurs when an individual gets less privacy or space than he/she desires and takes it a step further by suggesting that its evaluation should be in the field of "physico-environmental psychology". Empirical linkages between crowding and behaviour, thus, have been established. It has been shown that individuals will feel crowded in a crowding situation and will be unable to perform tasks to a desired standard, or might show more aggressive or withdrawal behaviours. As Bell et al (1992:p.514) defines that crowding is the state when the constraints of high density are salient to an individual. They write:

> "With so many people in so little space, you may grow up to feel the world is a complex place in which you have little power to influence events."
>
> (ibid, p.301)

Consistent with this view is Docking (1987), after reviewing psychological research, for instance, attributed violence or aggressiveness to overcrowding, more especially in inner city areas. According to Docking, when individuals have problems of lack of space and cannot escape, their frustration easily turns to violence. Galle et al (1972) took a number of measures of human pathology – mortality rates, fertility rates, percentage of families on public assistance, rate of recorded juvenile delinquency, rate of admission to mental hospitals – and found that they were associated statistically with overcrowding.

Gump and Adelberg (1978) have shown the consequences of community size for the quality of school life. Thus, in general, the larger the community, the more pupils there are in each of its schools. As school size increases, so the number of settings increases: there are more clubs, organisations, and more roles within them. But, the empirical evidence indicates that the number of settings increases more slowly than the population of the school. Barker and Gump (1964) gave the example of the American small town high school with 117 pupils and 107 settings, a pupil to setting ratio of 1.09, and a city high school with 2287 pupils and 499 settings, a pupil ratio of 4.88. Thus, pupils' use of settings – involvement in the activities of the school, and in particular, the extra-curricular games, clubs and activities – has been found to be less the greater the density of pupils. That is to say, the higher the ratio. Pupils report lower satisfaction in the bigger schools, feel less competent and experience less sense of obligation to participate in activities.

Some important effects of crowding in formal educational settings were reported by Baum and Valins (1977). These investigators performed a number of studies comparing the responses to high density of students assigned to suite-style dormitories and students assigned to corridor-style dormitories. This was a university college dormitory. "Corridor" residents shared a bathroom and a lounge with 34 residents on the floor; "suite" residents shared a bathroom and a lounge with only four to six others. All students shared a bedroom with one other student. While the suite and corridor designs were identical in terms of space per person and number of residents per floor, interestingly, they led to dramatic differences in the number of others that residents encountered constantly. "Corridor" type residents responded differently from "suite" type residents in a number of ways. They perceived their floors to be more crowded, felt they were more often forced into inconvenient and unwanted interactions with others, and indicated a greater desire to avoid others. Corridor residents were also far less sociable, perceived less attitude similarity between themselves and their neighbours, and were less sure of

what their neighbours thought of them as people. It was also found that living in a "suite" type or a "corridor" style dormitory led to different behaviours in other places and with other people. Baum and Valins reported that "corridor" residents looked less at confederates and sat farther away from them while waiting for an experiment. Corridor residents also performed significantly worse than suite residents on tasks under co-operation conditions, although they performed better under conditions that inhibited personal involvement with an opponent. It may be noted, and this is important, that corridor residents found themselves "overloaded" by their high level of interaction with others, or that they experience frequent unwanted interactions, and their withdrawal responses may be interpreted as coping strategies that prevent such involvements. Baum and Valins conclude with the suggestion that high density living in suites and corridors may be considered as a type of social conditioning process, and indeed, without empirical study, it could have been impossible to reach this useful conclusion for American universities.

Besides the university environment, secondary school settings may be sources, as Bell et al (1992:p.301) point out, of "learning helplessness" training. Baron and Rodin (1978) suggest that as class size increases, learned helplessness training begins to occur. They argue that larger classes lead to lower student expectations for control of reinforcement, because teacher feedback concerning student work becomes less discriminative. For example, as class size goes up, individualised student-teacher interactions decrease, and generalised (rather than individualised) praise and criticism increase. As we can see, by way of contrast, these findings in no way bear consistency with those of Rutter et al (1979).

Clearly, such conditions could lead to a state of learned helplessness and its negative consequences for performance. Baron and Rodin's suggestion may be right in the case of academic performance in British secondary schools as similar conclusions have been drawn by HMI reports (1988-91) of individual schools (as has been presented in a chapter

on its own). It now remains, thus, to examine for behaviour from the point of view of "physico-environmental" psychology. As Freedman (1975) demonstrates, crowded conditions do not directly produce "psychological deficiency" ("behavioural deficiency"), but may serve to intensify a person's typical reaction to a situation. Thus, those who would ordinarily be aggressive will react even more aggressively in overcrowded conditions.

Similarly, Morgan and Alwin (1980) found "school size" to have an important impact on "the participation of students" (p.241). School size means too many students in too small an area defined as school. Lower level and non participation are a negative function of school organisation (ibid:p.242). Using data from schools in the state of Washington (in USA) collected in the mid-60s by the late Walter L. Slocum and his associates; consistent with the predictions of Barker's (1968) theory of behaviour settings. Morgan and Alwin comment that larger schools would have consistently strong negative effects on students' participation in activities which are highly central to the school organisation. But, they admit to no simple interpretation of behaviour in the school setting. According to Morgan and Alwin, the direction and magnitude of the effect of a large number of students in one school would vary with the nature of the activity.

Also, in "school size" analysis assessing "the importance of school activities", Grabe (1981) administered a questionnaire to 9-12 year old pupils. The pupils were 803 males and 759 females attending 20 different Iowa (USA) high schools. Five of these schools were classified as large and the remaining fifteen as small. A school was designated as large if the total enrolment in the upper three grades exceeded 580. With the exception of two small schools, the small schools draw their students from a predominantly rural population. The larger schools were located in communities varying greatly in population. It was found that (ibid:p.21) students in the smaller schools participated in more school activities and that this participation was more strongly related to feelings of students' personal worth.

Bennett and Blundell (1983) reported a field experiment in which 10 and 11 year old students in two classes first spent two weeks in their normal classroom groups and were then assigned to work independently in rows before being reassigned to groups. The results indicated that the quality of work completed increased and the quality of products remained the same when students sat in rows. The teacher also reported that there was a noticeable improvement in classroom behaviour when the students were in rows. Some of the students seemed to prefer the work atmosphere of rows but complained of a loss in available work space, in terms of space/individual pupils being able to receive teachers' attention.

However, this general question must be distinguished from the rather more specific issue of whether the influence of crowding (or large number of students in a school) is only in a negative direction. Of course, it would clearly be erroneous to assume that crowding conditions are all-embracing. It is important to recognise that social influence operates in various ways and bear in mind the fact that the members of the crowd are not alike, thus the development of social deficiency behaviour (disruptive behaviour) would depend on the kind of activities the crowd is involved in (here I do agree with Morgan and Alwin, 1980). Also, the fact that some pupils will be more vulnerable than others to particular types of pressure would seem important to be borne in mind. Altman (1975) for example, in his discussion on "environment and social behaviour", puts forward the view that "as long as one has a seat, the crowd at a football game or at a theatre adds to the pleasure of the event. A crowding part also provides an exciting atmosphere, with many interaction opportunities – Altman, then, utters that, when he says that crowding is an exciting atmosphere:

> "... as long as one isn't in it too long."
>
> (p.47)

Thus, for school is long term crowding. The population may be growing, cities can seem to be expanding all the time, yet the number of new schools being built may not be quite

enough. It would seem the size of community and number of schools is very challenging, in so far as crowding is concerned (HMI, 1988-1991). Further, it may be argued that as the environmental conditions vary from school to school, pupils may then choose to go to "good" schools and this can bring a school into a crowding situation.

SPORTS FACILITIES AND BEHAVIOUR

Playing sports is an important part in the life of school. Coleman (1965) states that "sports is the only activity with a high degree of centrality". It is, as Zanden (1978) has proposed, one enjoyable and practical way of pupils' learning to live socially with others.

In a well-known early study, Parten (1932) observed nursery-school children, age 2 through 5 under free-play (area with well-arranged play facilities) conditions to identify the sorts of "socio-physical relationship" children's activities represents. She concluded that the child wants to play alone but next to others using the same kinds of equipment and are playing in essentially the same way. What is revealing evidence from this study is because most children what to be practical in play, to meet this goal the pupils' play area needs to be arranged adequately. This is what Husen and Postlethwaite (1985:p.3949) mean when they argue that sports facilities can be "used by teachers to show how children interpret such an environment as school". Also, the way in which available play spaces are designed can impact greatly on what children realise from their interaction with them. Consequently, it could be asked how well the resultant British secondary school plays spaces and facilities actually meet the needs of the pupils. Unfortunately, according to the HMI reports, the answer is mixed: having advantages and also disadvantages, depending on individual school or a particular kind of sports. This is the problem.

Pupils at Possilpark Secondary School in Glasgow, for example, made the telling point that too often in modern society there is simply no place for some adolescents: Swimming pools cater for groups like mums and toddlers and organised schools, and that the idea

of provision of equal opportunity for development is a myth (Crime Concerns Scotland, 1991b:p.9). Coffield (1991:p.83), then, argues that pupils will feel schools do not provide more successful lives, which can lead them to have little respect for the school.

Hart (1979) in his study of children's experience of places, observed children of a New England town "taking part in their activities and spending a long time with them". It is not known what age of children Hart studied. Also, there seems no evidence that the study asked for children's own views. Hart's study has a fascinating section describing children's feelings about their play places – favourite places, places where they felt good, disliked conditions and scary places. Riley (1979) doubts whether such could be used by designers to create better "habitats".

Lawrence et al (1984), again, comment from their observations in two London secondary schools. In fact, as part of their report on school influence of pupils' disruptive behaviour that there were fewer sports facilities, including clubs, than one would have expected in the schools. Lawrence et al reflect, however, that as a result, channelled some of the pupils to be disruptive, showing or shouting aggression. However, although the Lawrence et al study was commenting from a field view, I still feel there is too much of his own influence in this claim, because evidence of particular kinds of sports situations is missing. But I cannot afford to exclude, as a possibility, that "physico-environmental psychology" may have a part to play.

NOISE AND BEHAVIOUR

Everywhere we go there is noise, particularly if we live in cities (Figure .....) and "industrial areas" (Factories – Figure .....). Sometimes we adapt to noise, and may not even be aware of it as we get used to it at a certain level. However, research suggests that noise can harm us in many different ways, and studies have sought to define these consequences, identify factors that make the effects of noise more or less severe, and reduce noise levels or noise related problems. Regulations governing noise exposure have been put into effect, reflecting recognition of this important problem.

But, one question that is immediately apparent is that – How does noise affect behaviour in school?

Cohen, Glass and Singer (1973) theorised that urban noise may impair the educational development of children if it is severe enough. Studying a large high-rise apartment complex situated over a noisy highway in New York City, the investigation found that noise exposure on the lower floors of the complex was more severe than on the upper floors. While carefully controlling for such factors as social class and air pollution, which might also vary with the floors of the building, the researchers found that children on the noisier lower floors had poorer hearing discrimination than children on the upper floors. Moreover, the hearing problems on children on the lower floors may have influenced their reading ability, for it was found that they had poorer reading performance than children on the upper floors.

In another study, Bronzaft and McCarthy (1975) compared the reading skills of children from two sides of a school building. The focus of the study was to explore the effect of noise generated by passing elevated trains on the reading skills of children in a nearby elementary school (in upper Manhattan, New York). One side of the building was adjacent to elevated railroad tracks, bit the other side was much quieter. Reading scores were obtained from 161 second-, fourth-, and sixth-grade school children. A noise questionnaire was also administered to the 212 students: the 161 children involved in reading score comparisons plus an additional 51 children. It was found that 11 percent of teaching time was lost in classrooms facing the noisy tracks. Not surprisingly, the reading skills of children on the quieter side of the building were superior to those of the children on the noisy side.

Research also suggests that aircraft noise has effects on children's performance (task behaviour). Cohen, Evans, Krantz and Stokols (1980) studied school sites situated close to the flight path of an airport. The study was concerned with the impact of aircraft noise on attentional strategies, feelings of personal control, and physiological processes related

to health. A questionnaire concerned with responses to noise and blood pressure were used as methods for data collection. A total of 262 subjects (142 were children attending elementary school in the noise air corridor of Los Angeles International Airport and 120 were children claimed in quiet schools. No reason was given for this unbalanced number of subjects). In this study, Cohen et al found that compared with in control schools (located in quiet areas) the noise-affected children were found to have high blood pressure, and worse general health, they were also more likely to give up on a task, had developed no better attentional strategies to counter noise, and were more distractable. Cohen is one of the well-known American researchers in the field of "physico-environmental psychology", he never generalises by conclusion of one study. He repeated the study – the aircraft noise effect on school children, in the same place (Los Angeles City and around the International Airport) with the same research fellows (Evans, Stokols and Krantz, 1986), perhaps this time with different pupils, it is not clear from the final report. What is said is that control was made for the effects of socioeconomic variables on the side of the pupils' parents and accounting for the differences in hearing loss. The results of Cohen et al (1980) multimeasure assessments was, yet again, interesting, indicating that children attending noisier schools had more difficulty solving "complex problems" ("complex problems" is not defined in the report). In addition, Damon (1977) found that children living in housing where traffic noise was high were more likely to miss school.

Similarly, this time in Britain, the Inner London Education Authority Junior School project of Mortimore et al (1988) has data on the attainment, social class, sex and race of pupils on entry to their junior schools and still noted effects of noise level, that where noise level was low, movement around the class was usually work-related and not "excessive". Here the trouble is, of course, though empirically based, is that of using words such as excessive instead of referring to the name of the evidence. Also, Dunham (1992) was interested in theorising about teachers' stress caused by difficult working conditions. Here, too, unsatisfactory noise levels have been condemned. Despite his lack of interest in field analysis, Dunham had this to say:

"The physical aspect of poor working conditions include high noise level."

".... Little attention has been given to their possible harmful effects in schools ... noise can damage hearing and can have psychological effects of poor concentration and sudden changes of mood."

(ibid:p.60)

These are not only expressions of importance, but also possibly stressful noise effects which British secondary school pupils may be experiencing.

LITTERING AND BEHAVIOUR

Another background factor, particularly in antisocial forms of behaviour (disruptive to social order) is littering. As Robinson (1976) has put it:

"Litter is trash, discarded or scattered about in disorder over a socially inappropriate area. It is ugly, expensive, widespread and dangerous."

(p.363)

In this view it can be said that littering is a complex form of behaviour and subject to research. According to Robinson, it appears that littering is an unwelcome situation and a problem. The concern expressed about this problem have shown that school premises are related to littering behaviour. For example, Reynolds and Cuttance (1992) have focused on school effectiveness, research, policy and practice. The study carried out in one comprehensive school was in the west of the county of Cumbria, of 1200 pupils. In this study, multidimensional techniques were devised to obtain data on pattern of disruptive behaviour in the school. One of the many methods used was to analyse pupils' essays. Two hundred and fifty essays were analysed. The essays were non directive (ibid:p.144) except in the most general terms. Among the aspects of school misbehaviour, littering behaviour was an area of concern to students. The study also concluded, on this particular case, that there is some failure of school rule enforcement on littering behaviour (ibid:p.149). No further explanation is provided.

Apart from questions of detailed analysis, the work of Lawrence et al (1984) on disruptive behaviour points out, 'the absence of litter is to indicate a vigilant, an effective school discipline and an absence of misbehaviour involving school premises (ibid:pp.48,49). The same claim has been made by the Elton Report (1989), "we believe that pupils' behaviour can be influenced by all the major features and processes of school" (ibid:p.89), and "urge all schools to develop policies to deal with litter" (ibid:p.14). Litter, thus, seems to represent a major problem in some schools.

Heimstra and McFarling (1978:p.253) point out that there is relatively little, if any, research, "dealing with littering" issues. First, there is, as perhaps is often the case, lack of relationship between expressed ideas, policy making and detailed study of the kind. There is a need to study (Robinson, 1976) factors such as the placement and design of the litter bins and whether the areas involved (with litter) are clean or dirty initially.

GRAFFITI BEHAVIOUR

Graffiti is a problem. Wallace and Whitehead (1989:p.9) offer a definition of graffiti as "unwanted painting, writing or scratching on walls or other surfaces". In Coffield's words:

> "Graffiti: It is highly visible, it is a damned nuisance and an expense to those in authority..."
>
> (p.63)

Sadly, pupils' behaviour (within school) has also been associated with the problem of graffiti. Coffield further argues (or perhaps, mediate Sloan-Howitt and Kelly, 1990:p.32) that graffiti contributes to youthful criminal behaviour and interestingly asserts that the behaviour is usually present in youngsters of high school age.

Lawrence et al (1984) in their study on disruption in school, also offers a comment that the absence of graffiti indicates an effective school discipline and an absence of misbehaviour. A study which was carried out only in two schools concluded that graffiti

presented no significant problem in the schools and that there was only one instance of graffiti (ibid:pp.48,101). It is, of course, difficult to obtain a basic comment on the number of cases reported in the two schools. Even without comparative studies, there is this common error in data interpretation for those who use statistical methods (particularly the term "significant"). Such researches tend to forget the suffering of the few and forgetting the fact that what may not be a significant problem to one person or area could be an extremely dangerous threat to the other(s). In my view, perspectively, there is a case. I gather Reynolds and Cuttance (1992) in a recent review study, based on pupils essays, reports that students expressed strong feelings about the problem of graffiti (ibid:p,144). Similar expressions of concern about graffiti behaviour has been expressed by the Elton Report (1989:p.14), "all schools to develop policies to deal with graffiti."

It must, however, also be noted that graffiti is highly visible (Coffield, 1991:p.63). But, interestingly, mention made of it in the literature available which I review on behaviour-physical environment field is for limited reasons. It would seem "physico-environmental psychologists" do not feel the need to research systematically the physical environment of school-pupil behaviour links, and even what I see in school discipline literature is not thorough. It is clear that research seeking to understand this relationship between the physical environment and behaviour of pupils is of the greatest importance.

INFLUENCE OF THE ABOVE ON THIS RESEARCH

Two of the conclusions have already been presented in Chapter 1. It is, however, worthwhile and interesting to note especially another few, to emphasise the fact that several others have expressed the same opinion about a systematic research into the physical environment of school-pupils' behaviour relationships as follows:

a) "Space, play equipment and behaviour in .... schools up to now, most of the studies in this tradition have been concerned to compare the effectiveness of different kinds of teachers' style and little has been done on their physical settings."

(Lee, 1976:p.86)

b) "As we ... explore ... situational factors ... environmental factors within the school can be an issue in conflicts. This category includes such intangibles as school climates, and some very tangible things such as architecture, colors, dark spaces, time of day, and air conditioning."

(Bybee and Gee, 1982:p.163)

c) "Disruptive behaviour in schools .... differences in environmental conditions for different individuals ... What this may mean in more detail has to be found out by additional analyses .... It is natural to ask, however, whether there was not particular aversive situations or conditions in the school environment of the bullies that might 'explain' their behaviour."

(Frude and Gault, 1984)

d) "We feel better in a bright, attractive, clean environment, one that is cared for ..... Such improvements will create good will, positive working relationships among the staff, and between staff and students ... The process of creating a positive environment can be established in a number of ways: circulate questionnaires, do a regular check up; personally ask teachers how things are going; give support to teachers' good will in reclaiming some of the rotten portable classrooms, or resanding of desks, or reshelving, or building new play areas. Note what other schools are doing. Pick up good ideas and translate them where possible ..... the toilets, classroom numbers, facility areas etc. .... Ask students too. After all, it is their school as well."

(Rogers, 1990:p.184-185)

e) "The physical layout .... can minimise potential problems with young people who display disturbed behaviour patterns and minimise the staff's management problems .... Emphasis should be upon the planned use of resources rather than on crisis intervention when teaching has broken down. The examination of all physical resources is essential for use in a structured programme .... when raining to avoid unnecessary behaviour problems."

(Stone, 1990:pp.152-153)

f) ".... meeting special needs in the ordinary school should involve examining .... the present use of existing ... buildings and equipments."

(Wheldall, 1992:p.33)

g) "Little attention has been given to ... harmful effects in school. Research in industry has established that noise can damage hearing and can have psychological effects of poor concentration and sudden change of mood."

(Dunham, 1992:p.60)

In quoting all these above, I am illustrating that many writers have mentioned that there is a connection between pupils' behaviour–the school physical environment relationships), and that the connection needs to be systematically analysed. But, I shall remind the writers by arguing that one cannot eradicate or overcome a relationship by simply transferring the same protest from generation to generation.

COMMENT

Earlier (in Chapter 5) I showed that the HMI findings have classified the physical environment of the secondary school into two categories – good and poor. Also, the HMIs have only associated these defined conditions with level of academic performance. There was not at all a link with, or mention of, social behaviour. In this chapter, I have reviewed literature of the physical environment of school, in particular, as a factor which is influential on pupils' behaviour. I have discussed dilemmas and inconsistencies in the interpretation of the relationships which pupils' behaviour seems to have with the physical environment of school.

This review of the literature offers an interesting source of ideas of the sorts of physical environment conditions that pupils may be living in – in the schools. The HMI definitions of characteristics of school physical environment seem to have considerable relevancy with pupils' behaviour. However, this aspect of the physical school environment–pupil behaviour has not been systematically analysed in British secondary schools. Also "physico-environmental" psychology is not yet described as an independent approach that has a significant contribution to predictions of human behaviour in schools. In some ways, some of the physical characteristics have been treated as pupil-teacher interacting. In the main, most of the literature (particularly the empirical) reviewed are American.

In sum, Rutter et al's (1979) conclusion that the relationship between the physical environment of school and pupils behaviour is insignificant. This in no way bears consistency with the recent surveys conducted by British educational researchers, for example HMI (1987), Elton Report (1989), and available evidence from research in the United States of America. In light of this review, I want to conduct specific and fairly systematic research into this relationship (the school physical environment–pupil behaviour).

Again, this is a rather obvious point that the way to utilise appropriate methods of research to understand the situation in schools has often led to the underestimation of certain problems which pupils face. Having made these comments, some of the advantages and disadvantages of particular methodologies will in fact be described in Chapter 8.

SUMMARY

From the above reviewed literature so far, the following issues have been identified:

- Although the literature reviewed has given me a thorough grasp of the problem and knowledge as far as possible of the existence of the link between the physical school environment and pupil behaviour, none of them directly addressed this connection.
- Most of the studies reviewed are restricted to individual elements of the physical school environment. As mentioned earlier (particularly in chapters 2 and 3 of this study), a wide range of features of the physical school environment exist. For a better understanding of the relationship in question, as the literature itself suggests, would require rather the more systematic study which is based on more than just one or two elements.
- Most of the studies reviewed, particularly those which attempt to understand links between certain elements of the physical school environment and pupil behaviour are

from the USA (and Canada). This suggests (in terms of the formal schools) that similar links may be discovered of British secondary schools.

- Mention must also be made of the fact that links between the physical school environment and pupils' behaviour should be studied under the following heading: "Characteristics of the physical school environment and pupils' behaviour"; none of the above reviewed literature address the issue in this manner.

- A further observation to make of the reviewed literature provides useful evidence, relevant to the present study, certain past evidence often proves valuable only at the time the work was done and in this respect compares unvaluable (less useful) with the life today. It may, thus, be stressed that only by the provision of fresh evidence can this be provided. In fact, many of the studies reviewed make a request for fresh information about the link in question.

As can be seen, the original question (see Chapter 1), and even the question devised in light of the selected psychological theories (see Chapter 5), have not been answered. Therefore, the issues identified above lead to the formulation of 4 hypothetical propositions which provide a framework for a series of investigations.

Chapter 7

HYPOTHETICAL PROPOSITIONS

> "There is no better way to test whether the theory that started in fact now allows the researcher to predict new facts than to put the theory to a test by ... appealing to fact again to see if facts support the theory."
>
> (Townside 1953, p.51)

INTRODUCTION

This chapter presents hypothetical propositions derived from the theories and relevant literature reviewed in the preceding chapters, for understanding the connection between the physical school environment and pupils' behaviour.

THE HYPOTHETICAL PROPOSITIONS

The purpose of this study was to investigate the relationships between the physical environment of school and pupils' behaviour. The study converged on this central question: In what ways may pupils' behaviour be linked to the physical environment of school? Put it this way, in the psychological theories reviewed, human behaviour has a relationship with the immediate environment, be it social or physical. Thus, this allows me to theorise that the school's physical environment influences pupils' behaviour. But, the evidence in the literature concerning this relationship is unclear.

To clarify this relationship the following hypothetical propositions were investigated:

Hypothetical proposition 1: under a condition of un-interest for the physical environment of school, that pupils' behaviour, perhaps as well as attitudes, in a perceived "poor physical environment of school conditions" is not different from their behaviour in a perceived "good physical environment of school conditions".

The rationale for hypothetical proposition 1 is based on a review of the Rutter, et al (1979) study which shows that the physical/material school characteristics, such as the

level of resources, size/age of the buildings had little or no relevance for behaviour (ibid: pp.95-105). Under conditions of a poor physical school environment, therefore no differences of behaviours were predicted. Another support for hypothetical proposition 1 is derived from the work of Clarke and Round (1992:p.20) who claim that 'children do not care about buildings or an environment even if it affects them', and a similar claim is made by Furlong (1985:p.62).

Hypothetical proposition 2: under a condition of school as a behavioural setting, that pupils' behaviours are strongly related to the physical environment of school. In other words, that there is a connection between the appearance of the physical school environment and behaviour of their pupils. and that there may also be a connection between the physical environment of school and their pupils' attitudes..

Hypothetical proposition 2 is derived from the theoretical framework of Freud (1933), Lewin (1951), Skinner (1953, 1974) and Baker (1968). Freud's argument is that the physical setting is experienced, given the emphasis on child toilet training (see Chapter 4 of this study), it can limit/influence/even determine behaviour; Freud relates this particularly to home environment conditions for the up-bringing of children; and the relevance here is that secondary schools are also places for the up-bringing of pupils. Lewin held the environment as a key determinant of behaviour and argues that behaviour must be defined in terms of the whole environment involved, and, of course, the environment has many components (see Chapter 3 of this study) – which suggests that characteristics of the physical school environment may be intimately connected with pupils' behaviour. Correspondingly, Skinner has argued that behaviour is determined by environmental consequences – if the consequences of behaviour are rewarding, it will be likely to recur, if the consequences are not rewarding, the behaviour will be less likely to recur – this specifically relates very well with characteristics of the physical school environment described in Chapter 3 of this study. Further support for hypothetical proposition 2 is derived from the field of physical environment psychology (Proshansky

et al, 1970; Altman, 1975; Heimstra et al, 1978; Stokols et al, 1987) which deals with the adjustment of the individual to the specific cultural environment; the physical arrangement deliberately planned for individual/group work; the material needs for social interaction; and the adjustment of the unworthy features of the existing environment from influence upon mental habitudes. Support is derived, for example, from the work of Coffield (1991), which suggest that perception of school, and the extent to which it can fulfil the child's or adolescent's needs depends upon the social-organisational as well as physical-organisational features.

Before proceeding to the next hypothetical proposition, I pause here to note that for some details on Freud's (1893) theory of psychoanalysis, Lewin's (1951) field theory, Skinner's (1953, 1974) operant conditioning theory and Barker's (1968) theory of ecological psychology see chapter 4.

Hypothetical proposition 3: under a condition that factors within the schools themselves do affect pupils' behaviour, including attitudes, that schools with a 'negative' (poor) physical environment will suffer more from disruptive behaviour than those with a positive one.

The theoretical support for hypothetical proposition 3 is derived from Lewin (1951) and Skinner (1974). Empirical support is derived from the work of Valins and Baum (1973 – an American study), which shows that sharing facilities in schools caused feelings of crowding amongst students and, further, caused students to engage in avoidance behaviours ('antisocial behaviour'). Support for hypothetical proposition 3 is also derived from the work of a Committee of Enquiry (chaired by Lord Elton) into discipline in the British schools, which suggests that sources of discipline problems include not only the pupil-pupil or teacher-pupil interaction but that also the poor physical/material school characteristics as a further possible contributing factor (Elton Report, 1989: pp.115, 119).

Hypothetical proposition 4: that children's behaviour varies according to the nature of the physical environment of the school and the classroom within which they are working.

The rationale for hypothetical proposition 4 may be conceptualised on the basis of hypothesis 2 and 3. If poor characteristics of the physical environment of school are related to disruptive behaviour, and if indeed the physical environment of school is deliberately planned for the cultural behaviour of the school itself, then it follows that behaviour in, for example, science laboratories should be different from other classrooms which are not of science subjects, and/or the behaviour in the play ground. In some ways, it could be said that what may be perceived as good behaviour in one schoolroom setting may not be termed good behaviour in another. Further support for hypothetical proposition 4 is also derived from the theoretical work of Dewey (1944, pp.18-19) and Mayers et al (1959) who claim that differences between a school's component in terms of arrangement are sometimes deliberately designed to illustrate differences in subjects requirements, and places for special work and activities – which suggests that children's behaviour in the physical environment of a school designed for the purpose should be different from one which is not.

In addition, as a general rule, many researchers (Evans, 1988; Cohen and Manion, 1989; Coolican, 1990) stress that once the researcher has formulated the hypothetical proposition, the next step to take is to search for a method of collecting data which may be used to address the proposition. This will be the focus of the next chapter.

CHAPTER 8

METHODOLOGY

"The practice of genuinely educational research would transform the world in the cause of studying it."

(Torbert, 1981)

INTRODUCTION

The main aim of this study is to seek evidence of direct or explicit links between the physical school environment and the behaviour of pupils. The research is based on the question, 'In what ways may pupils' behaviour be linked to the physical environment of school?'. The first step the researcher took, as can be seen in the foregoing chapters, was to establish my knowledge in the area to analyse and draw upon the framework of the study. That is, the researcher examined some words used in the study, discussed some of the supportive approaches/theoretical issues, and reviewed the characteristics of the physical environment of the secondary schools/results of some relevant empirical studies. The researcher found this exercise of reviewing relevant information very useful, interesting, supportive and encouraging; in that it is a debatable area and especially important is the emphasis placed on the need for independent enquiry into the area. In other words, what the researcher discovered from the documents referred to above is that no one yet has done systematic research in this issue. It has perhaps been mainly the subject of theoretical debate. The present researcher then thought that it was necessary to give the subject a somewhat more detailed empirical examination and attempted this. It is thought that the more complete survey will be considered relevant to a better understanding of the issues involved. Given this line of thought, led the researcher, as can be seen in Chapter 7, to the formulation of hypothetical propositions as influenced by the information reviewed. The question now is how to carry out the empirical study and this quickly brought to mind the idea of methodology. This procedure, it was thought,

is logical in that no one method can be identified as a sincerely and rationally effective method(s) of analysis. Therefore, in this chapter I want to consider techniques for the study.

> "When we hear about behaviour in classroom, we tend to hear about the people involved – Jill did such and such, and the teacher did so and so. We rarely hear about the situation, the context in which the behaviour occurs, so we end up with a partial picture of behaviour, as though it occurred independent of its context."
>
> (Watkins and Wagner, p.63)

CONTEXT

Thus, the two areas in which this research took place:

- the historical cathedral city of Durham; and
- the metropolitan city of Newcastle upon Tyne.

Although both cities are situated in the North East of England, they differ greatly in their size and economic situation. However, another main consideration in choosing the areas was ease of access for the researcher.

In each area the schools were selected for the researcher by an educationalist familiar with the area and the school. They represented a mix of co-educational and single sex schools, also a mix of state schools and voluntary-aided schools.

The overall sample consists of one single sex and two co-educational secondary schools. The number of schools in each area is as follows:

- the historic cathedral city of Durham: two schools.
- the metropolitan city of Newcastle upon Tyne: one school.

I present a brief background of the study areas below:

Durham.

Durham is a small cathedral city. According to the 1991 census the population of Durham was 86,060 (see Local Government Review, 1992). The unemployment figure in Durham is 3,457 – less than Newcastle upon Tyne (see Employment Gazette, 1993). As the Local Government Review (1993) writes:

> "Durham City has the lowest unemployment rates ..." (in Britain)
>
> (p.5)

According to the O.P.C.S. (Office of Population Census and Surveys) County Monitor Report (1992), 47.8% of householders in Durham live in owner-occupied accommodation and 42.2% in accommodation rented from local authorities or the new town corporations. The image of the city is taken to be unique (because of the Cathedral, now 900 years old) from other British cities (Local Government Review, 1992: p.5) and is considered as peaceful.

Newcastle upon Tyne.

Although surrounded closely by several other cities, Newcastle upon Tyne ranks fifth or sixth in size among cities in England (Young, 1992). According to the 1991 census, the population within the Newcastle city boundaries was 259,541.

Historically the city was within the geographical county of Northumberland, but was created a county in its own right in 1400, and a city in 1882 (Young, 1992).

Newcastle upon Tyne is certainly a unique cosmopolitan city, a city of unusual tradition which is evident in all aspects of social, economic and political life (McLeod, ed., 1993). Its image is vivid, bubbling with life, originality and humour, but in some ways restless, even turbulent (Young, 1992).

Although Newcastle is taken to be a traditional, unusual English city (Young, 1992), it also has immigrants (indeed small number), mainly of Irish and Scots who have been

attracted into the area as refugees from poverty and unemployment in their homelands. Lesser, but by no means insignificant, are a number of foreign-born immigrants who have also come in, notably from China, the West Indies and Africa (O.P.C.S., 1991), as well as Pakistan, India and Bangladesh. Thus it is claimed that the city has fewer ethnic problems or social deprivation than in Britain generally (Young, 1992).

Newcastle upon Tyne also has the problem of unemployment higher than Durham. According to the O.P.C.S. (1991), the total number of unemployed persons in Newcastle upon Tyne (apart from those who are students, permanently sick or retired) is 24,474. This is more than the unemployment 'size' in Durham and perhaps this may be so because the population is also higher than that of Durham. However, the river, shopping, business, high-technology industry, an international airport and good rail network still contributes significantly to the economic welfare of Newcastle.

THE SCHOOLS

Secondary schools are the schools studied. I chose this level on the grounds that I myself have some research experience of such schools (Awiria, 1991, 1992) and it is here that behaviour is held to be the greater problem. For example Coffield (1991) writes of graffiti behaviour:

> "Graffitists are usually of high school age."
>
> (p.65).

Another reason for choosing secondary schools for this study is because the pupils of secondary school age have always been recognised as doing things more intentionally than children of lower school ages. Age (according to Erikson, 1982) can seem to have an impact on an individual's general concerns about his/her life, patterns of social order, and radius of significant others. Hubery's (1967) contribution is important here:

> "By the time boys and girls have moved into the period of adolescence they have begun to come to terms with life as a series of experiences within which personal decisions have to be made for which they themselves must be, to a large extent, personally responsible."
>
> (p.119).

In Piagetian terms (see Piaget, 1972, translated by Wells) adolescents are able to produce many more concepts of verbal stimuli than children; and their thought is such that it can enable them to establish their own mental and personality traits: In this context it was thought in the present study that pupils of secondary school age would have a higher level of accurate judgments of their relationships with and/or expectations for satisfactory conditions of the physical environment of their schools.

SUBJECTS (RESPONDENTS)

The subjects of this study were the secondary school teachers and the pupils. The age of the pupils was 13-18 years.

Teachers:

Support for the usefulness of teachers as subjects in analysis of pupils' behaviour is derived from the work of Robertson (1981), who had this to say:

> "If you want to know what pupils' behaviours are appropriate ask a teacher" (and maybe vice versa).
>
> (p.51)

Another justification for using teachers as subjects in the study is derived from Taylor (1981) and Tattum (1986) who claim that teachers experience school life and deal with pupils' behaviour day- to-day, and that they have a fairly well defined idea of what constitutes a good school and that they can identify the disruptive situation without much difficulty.

Pupils:

The rationale behind inclusion of pupils as subjects of this study is that it is their environment and is found within the theoretical work of Allport (1942) and Skinner (1974). I quote what each of them had to say as follows:

> "If we want to know how people feel, what they experience and what they remember, what their emotions and motives are like, and the reasons for acting as they do – why not ask them?"
>
> (Allport, 1942, quoted by Selltiz, et al, 1962: p.236).

> "Behavioural scientist is said to be at fault in failing to recognise that what is important is 'how the situation looks to a person' or 'how a person interprets a situation' or 'what meaning a situation has for a person'. But to investigate how a situation looks to a person, or how he interprets it, or what meaning it has for him, we must examine his behaviour with respect to it, including his descriptions of it, ..."
>
> (Skinner, 1974: p.77).

Similarly, Maw and Maw (1968) suggested that surveys could be conducted to the children in order that they make a self-report of their own experience. The success of the self-reporting approach has been studied by Baker (1945) who suggests that the problems of children are so close to their lives that they can scarcely refrain from answering what applies to them. Furthermore, inclusion of pupils themselves as subjects of the study may in some ways help to test HMI's (1988-1991) perception of the significant elements of the physical school characteristic described in chapter 5 of this study and to check accuracy of teachers in judgment of school life.

RESEARCH METHOD DESCRIPTIONS

> Fieldwork is ... a complex interaction between researcher and hosts and is reconstructed in a process of give-and-take (or exchange and reciprocity) and so it cannot be assimilated towards the model of a biomedical experiment where the researcher is free to outline what is to be done to the passive subject
>
> (Wax, 1980: p.273).

There can be many research methods, in education and the social sciences generally, for gathering information to understand any phenomenon. Yet each method has its advantages and disadvantages (Cohen and Manion, 1989). One of the tasks of the researcher is to identify the one which is most appropriate to the particular problem and circumstances of the research project. The following sections will describe some of the purposes and advantages for selection of the research methods in the present study – the physical environment of school – pupils' behaviour relationships.

RATIONALE USED IN SELECTING THE METHODS OF STUDY

In general terms, I used two principles in selecting the methods of investigation:

1. I used the methods which would be helpful in generating original data to answer the research question, observation, and questionnaire; and also the interview technique was used to make sure the form of data collected were valid, reliable and replicable.

2. Because of the time limitation, I used methods by which I could gather adequate data quickly. For example, I rejected an ethnographic method because it would require spending a long time on the field study.

In specific terms, I used three rationale in selecting the methods of data collection:

1. Method of questionnaire: This method was employed in this study to elicit the pupils'/teachers' perception of the characteristics of the physical school environment and how it might affect pupils' behaviour. It should be noted that the questionnaire method, as will be detailed later in this chapter, has the advantage that it allows respondents to express themselves freely and accurately, and can help overcome the difficulties involved in observing other respondents. It was also useful to employ the method of questionnaire where respondents would not give the information directly. It was considered relatively easy to obtain a rather largge

sample (from the two secondary schools), as the questionnaire could be easily distributed.

2. The method of observation was employed to record the links between the physical school environment characteristics and pupils. This was particularly useful because the questionnaire study failed to clearly define this connection. In some ways, the method of observation was selected with a view that some hazards associated with the questionnaire method limitations may be reduced. Of course, the researcher was not solely convinced that characteristics of the physical school environment may not be seen by some respondents in the questionnaire study as connected with behaviour, since this was the first systematic study of its kind. Also, respondents may tell me something which may not be true in the practical situation; and so the method of observation was selected with these problems in mind.

3. The interview method was also used to gather data, particularly from the subjects who did not have the opportunity to complete the questionnaire. Also, the interview method was used particularly in my second field study, at a time when the research could no longer afford the expense of a questionnaire.

METHOD OF OBSERVATION

One of the methods chosen for this study is observation. In this approach, as Cohen and Manion (1989) point out, the researcher is basically concerned with accurate description of the research situation, and that one of the best ways to achieve this is to watch it. As also defined by the *Oxford Concise Dictionary* (Fowler and Fowler edition, 1951), observation is

> "accurate watching and noting of phenomena as they occur in nature with regard to cause and effect or mutual relations."
>
> (p.815)

The point to emphasise here is that instead of asking people what they did, one can observe what they do and avoid the bias of exaggeration, prestige effects and memory errors. This point has also been mentioned by Cohen and Manion (1989: p.125) and Coolican (1990: p.60). In fact, generally, observation is regarded as a classic method of scientific enquiry. Pennington (1986) points out: "Observation is necessary to the scientific discipline of social, psychological or pure sciences such as physics"; Selltiz, Jahoda, Deutsch and Cook (1959) write:

> "Observation ... It is a primary tool of scientific inquiry."
>
> (p.200)

In social science (particularly behavioural), Travers (1969) has argued that observation "... can be made concerning the situations to which individuals are exposed or concerning the responses of persons to those situations" (ibid: p.112). For example, Bandura (1965) has research on children's imitations of models for aggression. Using observation as a technique for measuring the dependent variables of aggression, Bandura was able to manipulate a variety of independent variables, including the status or role of the model, the consequences of the model's behaviour and the degree of frustration experienced by the child just prior to observing the aggressive behaviour.

Thus observation has been used to study various aspects of school life/activities as noted by Ullmann and Geva (1984):

> "In educational settings observation has been used to gather information on a variety of topics such as students' task orientation and achievement (Gaver and Richard, 1978-79), aspects of teaching effectiveness and characteristics of 'good' teachers (Belgard, Rosenshine and Gate, 1966; Moskowitz, 1976), the relationship between various interaction patterns in the classroom and students' achievement (McEven, 1976), and the relationship between such factors as pacing, time spent on learning and student achievement (Bloom, 1974; Sirotnik, 1982; Wiley, 1973)."
>
> (p.113)

In terms of formal school, other projects such as the ORACLE (Observational Research and Classroom Learning Evaluation – Galton, et al, 1980, p.1, cited in Burgess, 1985:

p.164) on the third Edinburgh project, an intensive study by Delamont (1973) used observation to study social and educational 'phenomena' taking place in schools. Thus the first investigation was studying the 'effectiveness of different areas of primary school teaching'. As for the second study it was interested in teacher- pupil interaction in a private free girls' school.

As regards the present study, observation was used for seeing how pupils live and how they behave in given physical settings of school. Close attention was paid to such variables as crowding, pupils use of sports facilities/toilets/playground, pupils' response to differences in classroom arrangements/differences in distribution of subject equipment, behaviour in corridor/stairs/in observing display, littering behaviour, graffiti behaviour. The field notes (a fairly structured technique was employed: that is, the procedure employed was the lost of categories of school areas/characteristics of the physical school environment as based on both the HMI 1988-1991 document survey and the outcome of the empirical study one) taken during the observation were meant to illuminate and validate data collected through other research instruments.

In short, this observational study may be described as testing the theory (discussed in chapter 4) that the method of observation is most likely to provide the accurate answer to the question of human behaviour-the physical environment relationships (Barker, 1968; Skinner, 1974; Heimstra and McFarling, 1978).

Strengths of Observation

It may be helpful to list down briefly some of the strengths of observation as follows:

- Extremely high ecological validity (helping to gain first- hand knowledge of the way people behave in natural conditions).
- Can be used where it would be unethical to experiment, where verbal reports are not available and where direct questioning would be rejected or the information obtained by questionnaire has limitations.

- Subjects of the study can be unaware of being observed and therefore behave naturally in social context.
- Meaning of actors' behaviour more available.
- Lack of formality, presence of trust gives insights unavailable from any other method.
- Observation may also be helpful in measuring actions people may not even be aware they are performing.
- Observation can be used with respondents who are unable to communicate their thoughts.
- It may be used without the subject's knowledge, such as young children, or the severely mentally retarded.

This list was drawn up after citing a number of recent literature available on research methods in education and psychology such as Cohen and Manion (1989), Coolican (1990) and Hopkins (1993), as well as suggested by the psychological theories and some analytical studies reviewed in earlier chapters.

Ethical considerations in the observational method

The observational method in the study of behaviour has been criticised as being manipulative and unrealistic. As Coolican (1990) noted, subjects are regarded as passive instruments, there to be tricked, deceived and used. Roth (1990) argues that the observational study may occasionally cause direct harm to the subjects. Similarly, Bell et al (1992) acknowledge that the observational study method can sometimes inflict psychological pain or distress on the subject. The point is that there are many situations in which the observations of human behaviour that a psychologist might want to make would have undesirable consequences. Ethical considerations, thus, means taking positive steps to make sure that the subject does not experience any pain or distress, or

any possible long-term psychological damage (Roth, 1990; Bell, Fisher, Baum and Greene, 1992).

At this point, mention should be made, however, that in the present study, a great care was taken to protect the rights of the sample schools, to avoid psychological harm to subjects and the strategies were as follows:

- As will be apparent, the sample school where the observation study was conducted was a self-nominated school and, ethically, that can be associated with acceptance/permission to carry out the observation study in school.
- Before the researcher went for the observation study, the headteacher was sent letters by both the researcher and the supervisors in this study (see Appendix 4A and 4B) introducing the researcher and explaining the purpose of the research project, and were given freedom of choice whether or not they wished to participate in the study.
- The staff members of the school, particularly the headteacher/deputy heads, were shown the observation guide and were allowed to view the information recorded. Ethically, to have made known everything I recorded in the school.
- The subjects were assured that their names will be kept anonymous and this promise has been maintained.
- Care was taken not to break the school's rules.

These points are noted at different sections of this study; and there are also limitations of observation to which I will now turn.

Limitations of observation:

At this point some limitations of observation as a method of empirical enquiry must be mentioned and defined by Cohen and Manion (1986) as follows:

- Subjects can guess what research is expected to find

- Subjects may be affected by knowledge that they are being observed
- Researcher's behaviour alters that of group members
- It misses detailed information about the past of the event
- Opportunities for asking questions are limited
- It can only be done on a very small scale.

Coolican (1990) discusses the similar limitation in his book entitled *Research Methods and Statistics in Psychology*. It is worth mentioning however that in the present study these points have been taken into consideration to make the process of the observation as fairly scientific and qualitative as possible. For example, it was because of such limitations that more than one method was used – as Parlett and Dearden (1977, p.13) say:

> '... no method (with its own build-in limitations) is used, exclusively or in isolation; different techniques are combined to throw light on a common problem.'

Types of observation:

Also observation is not a single method. There are two principal types of observation – participant observation and non-participant observation (Cohen and Manion, 1986: p.125). My personal preference is participant observation. It is a methodology which is intentionally unstructured and which uses:

- 'Observation
- Interviewing and re-interviewing the same people
- Document analysis
- Self-analysis (of the researcher)
- Participation'

(McCall and Simmons, 1969; Cohen and Manion, 1986; Coolican, 1990).

In addition, in the case of the present study, participant observation (I was a participant by way of using the environment of the school) is unavoidable as opposed to non-participation because the observer became involved in relating to several physical factors of school such as use of toilets/furniture (chair), increase population and decrease use of space for individual in the school, observation of the display like group members, judging the conditions, and/or use of observation more as a laboratory for behavioural research.

Procedures of observation in school

In order to render the observation suitable in the limited time for analysis, the observation was made in one school The focus was on behaviour(s) which relates to a specific physical factor or condition. The observation was made of the daily routine for two weeks (Appendix 6A: Observation Guide used during study).

The observer arrived at the school at least ten minutes before pupils were allowed to enter. The observer met the head-teacher or his delegate as soon as the pupils were in school. Observation of the school assembly (in terms of crowding) usually followed. This required the fieldworker to be in a position to observe behaviours in the proceeding without (ideally) much difficulty.

During the morning the observer was conducted around the school by the school secretary, or often the deputy head, and made observations of the school hall, corridors, noticeboards, cloakrooms and playgrounds. Opportunities were taken to ask informal questions about the activities that took place in those areas of the school, and to observe pupils' behaviours in those areas.

The morning break was spent also in the corridors or playgrounds or around the toilet areas or common rooms. Two lessons were visited during the course of the morning. The school was asked to arrange one to be year 9 and the other year 10 form, preferably one humanity and one practical science period. The rational for this selection was based

on a review of 30 studies of HMI (see chapter 5 of this study) which showed that classrooms differ in their standards of physical arrangement. The purpose of the observation was to see whether such differences can relate significantly to pupils behaving differently.

To reflect on the principle of participant observation: that is sharing in the life of the observed situation.

Although the observer made use of several of the school's physical factors (mentioned above) and took part in several activities (such as accompanying pupils to assembly, playground, and above all, sharing in staffroom life with the teachers), the researcher did not take on any paid or accepted role in the school such as teaching. The involvement was in the relationships entered into with staff, pupils and the physical settings (relevant to this study), an identification with the education process and a willingness to go along with the pupils' and teachers' perception of my role. However, it should be mentioned that these perceptions were, in some ways, useful in incorporating me into the framework of the school. For example, I was seen as playing various roles such as, among others:

1) A secret agent. I would be surprised if some pupils' did not suspect my motive and identify me with the teachers. In fact, during observation in the fine art classroom, a number of pupils asked me questions about the work they were doing – whether they were doing it rightly or wrongly (the teacher at the time told me to say "yes, keep improving").

2) A fellow-human who shared in the company of both teachers and pupils. I felt this to be the most important aspect of my involvement. Whether reliving laughs or sharing boredom with the pupils, partaking of the staffroom merriment or exchanging views, chatting with pupils in playground, corridors – in all these respects I felt very much involved in the scene and in the action.

Also the success of this participant-observation depended upon the co- operation of the school and upon the observer's presentation of himself. The observer tried to dress in a manner which would not cause offence or draw attention to himself. In manner the observer tried to be interested and socially related in everyone in the school, but objective not evaluative. Care was taken to thank all who helped personally in informal discussions or by taking the researcher around the school. These things were done not only because they are, as said by Cohen and Manion (1989), fair methodology, but also for reasons of general politeness.

A lot has been written of the problems experienced by participant-observers in schools (Burroughs, 1971; Walford, 1991). Even before I went for this field study, in fact, one of my supervisors said that disruptive pupils may not want to see a coloured person in their school. These claims proved to be incorrect in the present study. It seems to me that the research student is in a particularly happy position in this respect. One's very lack of status – a mere student – greatly relaxes teachers who might well be threatened by a 'research psychologist' (I mean an officially appointed psychologist of discipline in schools – see Alschuler, 1980).

Recording Observation

As I needed detailed information on day-to-day relationships between pupils' behaviour and the physical environment of school, so the techniques for recording observation described here are the ones found useful by the researcher and other researchers, as below:

- The first technique was adapted from Rutter et al (1979) – that is the researcher observed for ten seconds, then recorded for five seconds, and continued observing and recording alternately through each situation (the school areas).
- Finally, I developed a recording form which enabled me to collect data about individual items of the physical environment characteristics and the resulting behav-

iour (see the form Appendix 6B). The observer made, in total, 10 visits and spent six and a half hours in the school per day.

QUESTIONNAIRE

I also used a questionnaire. By definition a questionnaire is a list of questions by which information is sought from a selected group (A Dictionary of Sociology, ed. by Mitchell, 1968). In the words of Evans:

> '... questionnaire is a series of questions dealing with some psychological, social, educational, etc., topic or topics, sent or given to a group of individuals, with the objective of obtaining data with regard to some problems; sometimes employed for diagnostic purposes, or for assessing personality traits.'
>
> (1978: p.56)

At first sight it might seem that the questionnaire technique is a particularly quick method of conducting a study, comparatively speaking whereas, for example, observation (Cohen and Manion, 1989) cannot. In the words of Moser and Kalton (1991), 'a questionnaire takes little time to send out and even the bulk of the returns can be received in short time'. The researcher has very little time to spend on it, but still requires a reasonably large amount of data to achieve success. It is partly for this reason that this study uses the questionnaire technique – in order to obtain adequate information within the time limit.

Apart from the time limit, it has to be mentioned that another reason for the use of the questionnaire in this study was that since the study subjects were pupils and teachers, they were too numerous to be observed in a particular situation at the same time.

The questionnaire technique is also of especial value in collecting information collections on a widely spread sample (which covers a large geographical area). This was the position of surveys of senior psychiatrists in England and Wales and in New York state described by Cooper and Brown (1967). The response rate in England and Wales was in fact 92 per cent and, although not quite as good, that in New York state was still as high as 79 per cent.

Similar high response rates have been reported by the Committee of Enquiry into Discipline in Schools in England and Wales (Elton Report, 1989). Of those to whom questionnaires were sent, 89 per cent of the primary teachers, and 79 per cent of the secondary schools returned them. On these scores at least, the researchers had no need to regret their use of the questionnaire method. Thus, for the present study to receive a consideration, on the hypothesis that pupils' behaviour has relations with their school's physical environment, large numbers of schools would need to provide evidence which, as mentioned earlier, observation cannot.

The questionnaire technique can sometimes avoid the problems associated with the use of interview technique. For example, when information concerning several students of a school is required some teachers might be hard put to give accurate pictures and in such situations the use of a questionnaire allows for pupil consultation and may lead to more accurate information than a doorstep interview.

The same holds with questions demanding a considered rather than an immediate answer. In particular, if the answer requires, or would be more accurate as a result of consultation of documents, a questionnaire filled in by the respondent in his/her own time is preferable. Thus, the above points mean so much in this study because it is concerned about individual pupils' perceptions of the physical environment of their schools.

A final point in favour of the questionnaire, especially the mail questionnaire, is that the problem of obtrusive role – the participant observer affecting the behaviour of the people being studied – is avoided.

Although there has been a growing acceptance of the questionnaire method for collecting an adequate response rate, there seems to be some difficulties associated with it. The first thing to say is that the answers to questionnaires may have to be accepted as final, although this study can overcome this problem by arguing in view of the findings of interview technique. In fact there is no opportunity to probe beyond the given answer to clarify an ambiguous one, to overcome unwillingness to answer a particular question, or to appraise the validity of what, as one respondent said, in the light of how he/she said it.

Secondly, as Moser and Kalton (1971) argue, the questionnaire method can be inappropriate where spontaneous answers are wanted, where it is important that the views of one person only are obtained uninfluenced by discussion with others, and where questions testing a person's knowledge are to be included. I agree this particular weakness may affect this study. However, because I want to understand how individual pupils perceive their physical surroundings within school, respondents discussing the situation with someone within the school may provide the correct information. I am not researching something secret, it is the day-to-day relations between pupils' behaviour and the physical environment of school that I want to understand.

Thirdly, with the questionnaire technique, the researcher cannot (in certain conditions) be sure that the right person completes the questionnaire. Although in this study it is intended to state clearly on the questionnaire that it is a particular person's (teacher or pupil) response which is needed, I do not claim to overcome this error completely. Even if I ask the respondents to put their names on the questionnaire in order to check that the right person has completed it. This of course, conflicts with my desire for anonymity and may serve only to detect unwanted answers. It might not produce the answers from the selected respondents. Scott (1961b) reports that in one mail survey where persons were asked to pass the questionnaire on to someone else (but where the name of the selected person was given only on the delivery envelope), a check on the signatures to the returned questionnaires showed that about 10 per cent of them had certainly been passed on, probably, in most cases, to the selected person's spouse (usually from husband to wife). He suggests two situations in which the questionnaire may often be completed by someone else. The first is when the selected person thinks it does not matter who responds, and this would seem to include opinion surveys. The second is when the questionnaire contains (after an initial filter question) a long series of questions which do not apply to some members of the sample. These members may falsely conclude that the questionnaires were not intended for them and may then pass them to persons to

whom they think the questions do apply. These suggestions, however, are not expected in this study. What might be a problem is respondents' finding some questions difficult to answer which others may know the best way to answer. This problem can result in a great deal of harm in research which is involved with children. However, as pointed out earlier, different approaches can reduce this problem, and particularly that of non-respondents.

Question Design

While designing the questionnaire, the following guidelines for writing effective questions and statements (Babbie, 1983, cited in McMillan and Schumacher, 1989: pp.256-58) were carefully observed. For example, long and complicated items were avoided. Another concern of the questionnaire designer was to make sure that all questions were relevant, related to one another, and were important to the respondents; and that all respondents interpreted the questions the same way. In short, clarity should exist throughout the questionnaire.

The questionnaire was also provided with a brief statement which aimed at assuring the respondents about the confidentiality of their answers, motivating them to answer all the questions and briefing them about the purpose of the study and its importance. In fact, the introductory statement, or (as some authors prefer to call it) is important as confirmed by many educationalists such as Mouly (1978):

> 'The cover letter is also of crucial importance to success, since the investigator must depend on the printed words to *sell* his study. A good letter can make a real contribution to both the rate and the quality ... The cover letter must be brief, courteous, and forceful in pointing out the significance of the study and importance of the individual's participation.'
>
> (p.193)

Thus the introductory statement of the questionnaire used in this study includes all the necessary points implied in the quotation, including the name of the researcher.

Questionnaire Administration

Oppenheim (1966) and Cohen and Manion (1989) divided questionnaire administration into three types:

1) Mailed or postal questionnaires

2) Self-administered questionnaires

3) Group-administered questionnaires.

In this study type 1, however, was not used because it was thought that mailing on postal system may delay or damage the questionnaire through bulk-loading/rain – during distribution. Also, it was thought that the personality of the researcher counts, i.e. his/her style of conduct can convince others to contribute to his work. So, the questionnaires were delivered direct to the sample schools by the researcher. Before this, permission to ask pupils and teachers to help was first obtained from the headteachers concerned. All headteachers were sent letters by both the researcher and the supervisors in this study (see Appendix 4A and 4B) introducing the researcher and explaining the research and the help the researcher was asking for. Thereby, when assurance of help was given, the questionnaires were delivered in the early days of the second term of the academic year 1992/93.

In the case of the other remaining two (2 and 3) types of questionnaire management, they were adopted but used differently: type 2 (self- administered) for teachers, and type 3 (group-administered) for pupils. Detail as defined below:

Pupils' Questionnaire (Appendix 5A)

Since they were group-administered questionnaires, type 3 were used for pupils. It was agreed between the headteacher and researcher that some teachers would help during the completion of the questionnaires. The role of these teachers was to read aloud the instructions (or introductory statements) on the front of the questionnaire whilst the pupils

read their own copy. Another role of the helping teachers was to tell the pupils: 'when you have finished, place the sheets in the envelope provided and then seal the envelope'.

Other procedures followed in the field activity were as follows:

The questionnaires were completed in the different teaching groups. However, it was all during the same period of the day to prevent leakage. The questionnaire was administered in the normal way of running a class. The teachers who helped were briefed beforehand but in many cases a printed copy of the pupils' questionnaires was given to them. Most of the questionnaires were completed during a P.S.E. lesson. The completed questionnaires were collected and taken away by the fieldworker (researcher). The whole operation was designed to cause as little disruption and inconvenience to the school as possible.

The administration of the questionnaires to groups of pupils in a school setting has its methodological advantages and disadvantages. The advantages include having a virtually captive sample and therefore a high response rate and pupils receive help where they see difficulties. The responses can be accurate. The disadvantages are almost corollaries of the advantages. The researcher is utilising the authority system of the school (as explained in the same section above), which may distort the pupils' responses. One fear is that some pupils will tend to give socially acceptable responses, perhaps regarding the questionnaires as a test – with right answers. Another, not necessarily contradictory, is others may give bravado, anti- social responses. Both could occur as a kind of polarisation effect. These possibilities are difficult to test. The impression of this researcher is that neither was of any importance and this was attributed largely to the use of the envelope. There was often a visible reaction on the part of the pupils when they saw the envelopes and (the researcher infers) recognition of its implications which were reinforced by another part of the introduction – 'your answers are completely confidential and will not be shown to anyone in the school'. This is also confirmed by the wide range of comments, both critical and appreciative, made in the free response section of the questionnaire.

Teachers' Questionnaire (Appendix 5B):

The teachers were given two weeks to study and fill in the questionnaire. A day was then agreed upon between the headteacher, the teachers selected and the researcher for the collection of the responses.

INTERVIEW STUDY

So far two sources of information: observation and questionnaires, have been discussed. Both techniques are important for many reasons but they cannot provide all the information needed of the research because both of the techniques seem to have substantial disadvantages. Interviewing is without doubt generally the most appropriate procedure, even though it introduces various sources of error and bias. Therefore, in this section, I consider the interview technique.

Miller and Wilson, 1933 define interviewing as the 'method of collecting data from subjects face to face by asking questions' (p.62). This might appear a straightforward matter, with the respondents just giving straight answers to the questions asked of him or her. The reason for the use of interview technique in the present study is, however, much more complex than this suggests. Interviewing is considered here simply as a special method – for the fact that much is learnt in everyday life by talking to people leads to the conclusion that framing questions and talking to them in research are simple tasks. The face-to-face interviewing in the present study is to obtain specifically what the subjects say and in fact the interview may be used to obtain data on several issues (not all analysed in this study) such as tone of voice, showing anger or manner of speech, silence – all of these can indicate how accurate and sincere the subject is. In questionnaire techniques the respondents may be brief and less eloquent. As Mace (1992) says, 'verbatim transcripts of interviews are undoubtedly full of unexpected revelations, diversions and stories that an interested listener may encourage' (p.11). The value of interviewing, therefore, is that the person being studied

can describe the situation much more deeply and confess his/her own feelings and identify with his/her own or others' responses to the situation.

Precisely the reasons to emphasise here about the choice of interview as research technique are that:

- The interview, in contrast to the questionnaire, is flexible; it permits the investigator to pursue leads that appear fruitful, to encourage elaboration of points the respondents cannot understand or can partially avoid and to clarify questions which the respondents can apparently misunderstand. Whereas the questionnaire is out of the hands of the investigator the minute it is mailed, the interview allows the investigator to remain in command of the situation throughout the investigation. As concerns the flexibility of the interview, it is, of course, of greatest value in exploratory studies such as the present study where the structure of the field has to emerge as the investigation proceeds.

- The interview permits the establishment of great rapport and stimulates the respondent to give more complete and valid answers. It permits the canvassing of persons who are essentially illiterate for questionnaire purposes or who are reluctant to put things in writing. It generally promotes a higher percentage of returns. It also permits the interviewer to help the respondent clarify his/her thinking on a given point so that he/she can give a response where he/she would normally plead ignorance and, even more important, so that he/she can give a correct answer instead of a false one.

- The interview also allows the observation of the respondent for signs of evasiveness, non-co-operation and other irregularities. That is, not only can the interviewer appraise the sincerity and co-operation of his respondent but he can often combat negative attitudes by establishing a higher rapport or, at least, take the factor into consideration in interpreting the results.

Another advantage of the interview technique is that respondents' confusion can be detected and questions can be reworded so as to elicit meaningful answers. For example, in their study entitled: Recent experience with problems of labour force measurement, Bancroft and Welch (1946) showed that respondents answer questions about their labour for status in terms of what they consider to be their major activity rather than in terms of the actual wording of the questions. Even if they were working part-time, people who considered themselves primarily students or housewives answered 'no' to the question, 'Did you do any work last week for pay or profit?'. A substantial improvement in the validity of employment estimates was attained by accepting the respondent's frame of reference and building a sequence of questions which first asked for their major activity and then asked students and housewives whether they were also doing any paid work.

The interview technique can take on some of the issues that would normally cause embarrassment or evasion among respondents and respondents can be induced to answer large numbers of questions. Thus the present study's use of the interview technique is to avoid falsely reporting events or behaviours.

Many successful behavioural studies use interview techniques. For example, Schonfield (1965) made an investigation into the behaviour of young people aged between 15 and 19. The scope of the research was to find out as much as possible about the activities of teenagers within a specified framework. The interviews were obtained direct from the teenagers themselves. The interviewers were specially recruited and trained for the work. The research was based on a series of random samples. A large sample was interviewed with a view to describing certain norms of behaviour within the teenage group. After careful consideration it was decided that provided the questions are clearly expressed, the interview situation remains the best method of obtaining information about moral behaviour and attitudes.

Interviews also have been conducted for years with teachers and pupils, and a lot of early information about classroom managing generated through their use. Elliott (1976-77)

and Adelman (1981) describe their 'triangulation' among accounts of a teaching situation from three points of view – teacher, students and observer – in an action research project whose main objective was to stimulate teachers' self-monitoring. After the teachers had been interviewed once, they were presented with the students' interpretations of the same event as a further stimulus to their reflections.

A good recent example of the use of interviews with children in school can be found in Tattum (1986). The scope of his research was to find out as much as possible about problems of abnormally violent and disruptive behaviour in a detached unit especially set up for disruptive adolescents. Tattum's interviews were obtained direct from the students, aged 12 to 16. A sufficiently large sample (89) was interviewed, to exclude all value judgment on the part of the interviewers. The method of obtaining interviews was very expensive but provided a clear picture of the disruptive patterns of adolescents of the secondary schools and units as a whole. Furthermore, Tattum's study also observed behaviour in the unit – as a result he admits difficulties in that the observation of disruptive behaviour was impossible as the youngsters of Tattum's study were already defined deviant long before he met them (p.306). Tattum claims that his data with teachers and headteachers would have been more successful if he had used interview techniques. Tattum, in contrast to his negative views concerning observation, sees the interview as a most powerful and useful tool in school survey research.

Perhaps one of the most interesting interviewing of children of school age is by Moore (1986). He had 9-12 year old children take him on 'field trips' round their own neighbourhoods, and from extensive interviews was able to describe the pattern of their outdoor activities and the factors affecting these activities, such as the attraction of the local parks, the availability of accessible areas for playing games such as football, the excitement of 'dangerous' places like the local electricity substation, and parental restrictions about avoiding areas of busy traffic or wherever there might be a danger from strangers.

Although interviews are also commonly used as a survey technique and more helpfully permits a follow-through on misunderstood terms and inadequate responses, however, as I pointed out earlier, like other methods (observation and questionnaire), there are problems . The greatest weakness of the interview is that the interviewer's very presence can affect the responses he/she gets. The fact that the interviewer is allowed to vary his/her approach to fit the occasion is likely not only to complicate the interpretation of results but, even more serious, to project his/her personality into the situation and thus influence by means of intonation and emphasis, gestures, facial expressions and various subtle cues the responses he/she receives. Phillips (1971) claims that attributes of interviewers can have their effect on responses, and attributes of the subject may lead to problems, especially when the subject tries to please the interviewer, or is apprehensive about the likelihood of an evaluation of performance resulting from the responses given in interviews, or tends to agree to anything the interviewer says. In the case of the present study, the degree of this weakness will depend on the ability of the researcher to overcome the uninvited biases. Phillips goes on to argue quite plausibly that interviews are often used when they are not the most appropriate method of data collection. He concedes that there are occasions when they are the best way of collecting information – when details of past activities, motives, beliefs or attitudes are under study (a long list!). They generate data that is standardised, amenable to statistical treatment, and can be generalised if triangulated with other methods, and they have their uses. It is in terms of triangulation that interviews find their importance in the present study – used particularly to understand the criticisms of pupils and teachers of their school's physical conditions.

However, a disadvantage of interviewing as a research technique is cost. Not only can it be expensive, especially when the survey covers a wide geographical area, but it is also costly in time and effort since it almost invariably necessitates callbacks, long waits (when the subject is busy with other things) and travel. Besides, a busy person may prefer to fill out a questionnaire at his/her leisure rather than submit to an interview. However,

the present study is sponsored to produce evidence of the topic under study – the problems associated with cost can be minimal. Also, I used the interview method in this study specifically to obtain more data to overcome the limitations of the other methods used.

Procedures of the Interviews

With interview difficulties discussed above and as recommended by Cohen and Manion (1989), every effort was made to ensure that the interview schedules aided comparable coverage, content and economy of time, i.e. by using the interview time in a rational manner. The interview schedules were adapted from Taylor and Dale (1971) (see Appendix 7 for both teachers and pupils). These schedules were used this way: of pupils for all pupils as respondents, and of teachers for all teacher respondents. These schedules consisted in the main of questions similar to the questionnaire with all aspects of the school's physical environment which were considered to be an essential part of the school culture (setting), part of which was there unexpectedly and was related to pupils' behaviour. The information from the self-completion questionnaire, the observation and informal enquiries of the morning usually gave a general idea of the situation so that it was possible to ask detailed or clear questions without going through the many filter questions. In the main, the interviews proceeded in an informal, conversational style following the schedules in varying order and not always completing them, depending upon how the schoolteacher or pupil responded to the opening stages of the interview and how he/she progressed. Each respondent was encouraged to express the views which he or she thought were pertinent to the study or comment on the interview.

The Teachers' Interview

The interview with the teaching staff (teachers and deputy heads) were carried out in the afternoon following the morning's observation, and were at most half an hour in length.

The Pupils' Interview

In the case of pupils, arrangements were made by the headteacher of the school for the researcher to carry out the interview with the pupils. All the interviews took place in the lunch break (after the pupils had their meals to make them happy to talk and answer questions).

Recording of the Interview

It is important to devise strategies to get the information down on paper. While doing so one strived for cogency, significance and validity as described by Cohen and Manion (1989) and Coolican (1990). The strategy I used is set out below:

- A tape recorder was used with the permission of the interviewee.
- Where the interviewee did not approve of the use of a tape recorder, the interviewer used pencil to record the information on paper. Notes recorded contained exact words, phrases and quotations from the secondary school pupil or teacher.

In general all information was recorded during the interview.

SUMMARY OF THE THREE METHODOLOGIES CONTRASTED

By way of interest, I illustrate the relative strengths and weaknesses of the observation, questionnaire and interview methodologies in Box 4.

Box 4: Contrast of the Observation, Questionnaire and Interview

Consideration	Observation	Questionnaire	Interview
1. Personal Involvement	It is possible for observer to record behaviour or phenomena as it occurs. The observer has wide chances of contact with not only subjects but the whole environment.	It can be filled out by subjects in the absence of researcher. In other words researcher is cut off from the actual situation.	It allows for researcher to interact with the subject, but the involvement is restricted only in terms of individual to individual interaction.
2. Major expense	Cost of travel and food can be high, particularly if commitment to quite a long-term study.	For a wider area or large number of subjects, cost of the postage and even printing can undoubtedly be considerably higher.	Travel and food cost, but not so great as that of the other methods. Interviewing a large sample can also be time consuming.

3. Opportunities for asking direct or further questions.	Opportunities for asking direct questions is much less. Researcher mainly has to rely on memory and reading on structured form.	It makes it difficult for the researcher to interact face to face with subject or for the researcher to define what subjects do not understand.	There is the possibility of repeating questions to make sure that they are understood or asking further questions in order to clarify the meaning of a response.
4. Opportunities for probing.	Extremely highly intensive in terms of lengthy periods of study.	The researcher cannot probe. He/she relies on what subjects state.	The researcher is in a position to observe not only what the respondent says but also how he says it. He/she can, if he/she wishes, follow up contradictory statements. If need be, the interviewer can directly challenge the subject's report in order to see how consistent his/her answers will be.
5. Relative magnitude of data reduction.	It can be limited in terms of schedule.	The researcher depends on only what is listed.	There is a great chance because of coding.
6. Rate of return (response).	Although a large number can be observed, the observer may not record every piece of information concerning all the subjects simultaneously.	Return can be very little, depending on the interest of the subjects.	Many respondents can be questioned fairly quickly.
7. Sources of error.	Researcher's behaviour alters that of group members. Emotional involvement makes objectivity less easy to maintain.	Places less pressure on the subjects for immediate response. More likely to produce an outsider response, not respondent's true ideas. The researcher has no way of knowing whether respondents are correctly interpreting or have objections to the question format.	Structured questions miss more information/data. More influenced by superficial interpersonal variables; respondent has no time to come to trust and confide in interviewer.
8. Typically, the number of respondents who can be reached.	The researcher can observe a group of people who are involved in the same activity.	It can be administered to a large number of individuals simultaneously.	It usually calls for questioning each individual separately.
9. Overall reliability.	It is possible for the observer to record behaviour as it occurs. It yields data that pertain directly to typical, behavioural situations. Higher ecological validity (i.e. greater value to a given environment).	It is possible to tap more permanent aspects of the individual's personality (because it allows anonymity). However, it is less reliable in some ways because individuals who return the questionnaire may not be the typical people wanted to survey; although this may not be the case with a group administered questionnaire.	Less bias in analysing answers, particularly if questions are structured. Less influence from dynamics of interpersonal variables. However, not highly reliable – question wordings may reduce richness or answers to less natural.

From the foregoing (and Box 4 in particular), one can see that methods all have their advantages and disadvantages as a research technique. As Coffield et al (1980) state:

> "There is no one royal road to truth in social science .... All methods have their strengths and weaknesses and are, in varying degrees, messy and unsatisfactory because life is messy and unsatisfactory."
>
> (p.16)

Thus, one method of research of research cannot fulfil the role of the major source of data for reality of understanding of behaviour. In order to obtain justifiable interpretation to the physical environment – pupils' behaviour relationships in the schools – it would seem necessary as, Parlett and Dearden (1977) say:

> "... No method (with its own built-in limitations), is used exclusively or in isolation; different techniques are combined to throw light on a common problem."

To put it in other words, the methodology I use is a combination of qualitative and quantitative approaches, leading to triangulation, a research technique depicted in the following terms by Cohen and Manion (1986):

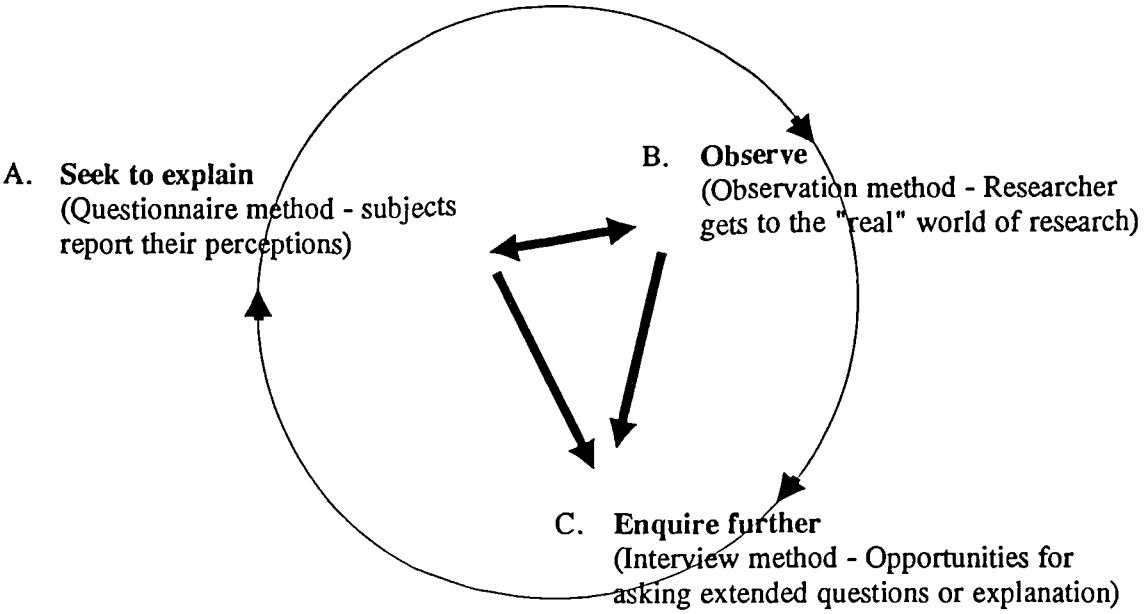
> "Triangulation may be defined as the use of two or more methods of data collection in the study of some aspects of human behaviour .... Triangulation techniques in the social sciences attempt to map out or explain more fully, the richness and complexity of human behaviour by studying it from more than one standpoint and, in doing so, by making use of both qualitative and quantitative data."
>
> pp.269-270)

Another similar view of triangulation is that of Denzin (1978a, p.28), quoted in Patton (1987, p.61) for who the logic of triangulation is based on the premise that:

> "no single method ever adequately solves the problem of rival causal factors ... Because each method reveals different aspects of empirical reality, multiple methods of observations must be employed. This is termed triangulation. I now offer as final methodological rule the principle that multiple methods should be used in every investigation."

Moreover, since the present concept (pupils' behaviour-the physical environment of school relationships) has not been treated separately in past research into discipline in British schools, my goal is to draw on validity from several methods and explore, if possible, those relationships.

This progress, insofar as observation, interview and questionnaire methods are concerned, is not linear but circular and repeats itself in this manner:



In this way different sets of information are obtained. This assertion is also supported by Cohen and Manion (1986) who argue that a single approach is social science would only offer a 'very limited view of the complexity of human behaviour and of situations in which human beings interact', These two authorities put forth two multimethod approach advantages which may be summed up as follows:

- The more the methods contrast with each other, the greater the researcher confidence. Furthermore, the use of a multimethod approach minimises 'the chances that any consistent findings are attributable to similarities of methods.'
- The use of multiple method helps to overcome the problem of 'method-boundedness', which is thus explained by Boring (in Cohen and Manion, 1986):

> "as long as a new contrast has only the single operational definition that it received at birth, it is just a construct. When it gets two alternative operational definitions, it is beginning to be validated. When the defining operations, because of proven correlations, are many, then it becomes ratified."

PILOT STUDY

Validation of Methods

All of the methods used in this study were constructed and validated, in part, with 6 professors in three British Universities (see section acknowledgement), during the first term (in winter 1992) and early weeks of the spring term (1993) of the second year of the project: I asked them some of the questions; I discussed the questions with them; and some of them gave me examples of the way they devise questionnaires, and others gave me reports of their work, that I should read through and gain knowledge from. The professors were chosen on the basis that they have long research experience particularly on behaviour in school. They were friendly and were interested in the study. Also school experiences of full-time Post Graduate Certificate students of Durham University School of Education were drawn upon in a number of informal discussions, as well as the staff members. Further, formal discussions were held during the Environmental Education lessons and research development seminars. Another formal discussion was held with the secondary school headteacher during the HMCIS (Her Majesties Chief Inspector of Schools) Course at Durham New College. Above all, numerous meetings were held with the two supervisors who were very helpful. For example, they advised me about the wording of questions and structure, and guided me in formulating questions that would provide the kind of information for which I was searching.

Anonymity

Before going any further, it should be noted here that one of the major issues regarding the quality of information is that of anonymity, particularly of information provided in questionnaire and interview studies. Throughout the present study, respondents were not asked to give their names. This, it was believed, would encourage truthful responses. Insofar as names of the sample schools are concerned, the headteachers' requested not to include the name of their school in this final report, because they felt this would be disloyal to their school. The main results of the investigation are presented in the following chapter.

CHAPTER 9

PRESENTATION AND ANALYSIS OF DATA

> "A social institution can be understood only if we ... analyse the way in which it appears in the personal experience of various numbers of the group and following the influence which it has upon lives."
>
> (Bossard and Boll, 1966: p.115)

INTRODUCTION

The purpose of this ninth chapter is to present the result of an empirical study. The study had two parts which are analysed separately as follows: Study 1 – based on data from the questionnaire responses; and Study 2 – based on data from the observation and interviews. Study 2 was carried out in a different school to the schools in the first study.

Data presentation techniques

Cohen and Manion (1989), Coolican (1990), Kline (1993), Grimm (1993), Hopkins (1993) and Hayers (1994) point out that once data is collected, the researcher must also give careful thought to techniques of presentation. According to Wittrock (1986), Evans (1988) and Hayers (1994), techniques for the presentation of the data is an important part of any scientific or purposeful research. So, at this point the techniques I used to present the data will be briefly described.

Data are presented in this study using mainly two techniques: i) sometimes the percentages of the respondents; and ii) sometimes the exact expression of the respondents/record of the observed situations. These ways of presentation of data are commonly known as the descriptive technique (Wittrock, 1986; Coolican, 1990).

It should be noted that these techniques have been popular with investigation in environmental psychology (Altman, 1975; Bell et al, 1992) and have been used to present

data on pupils' behaviour (Wittrock, 1986; Tattum, 1986; Galvin, Mercer and Costa, 1990). It is, in part, this popularity which leads the present researcher to feel that these particular descriptive techniques are appropriate.

First, HMCIS (1993) advocates the virtue of descriptive data in the form of percentages and display of information in terms of evidence of pupils' acts, the situation of the school and the viewpoint of both teachers and pupils (ibid: pp.3, 6-7, 18-20). This is also the view of the present research.

Secondly, there is an ongoing debate that researchers of behaviour in school are more concerned with individual children and the environment of their school (HMIS – Scottish Education Department, 1988; Elton Report, 1989; Hopkins, 1993). The present study falls into this category. At several points in the study, respondents were asked to give both their opinion and comment; and individual subjects gave different comments which I have not analysed using mean, standard deviation or chi-square test, because I though some of the meaning of the information may be useful for handling individual cases. Similarly, as it will be apparent certain situations in school only affect one child in a group/class.

Third, taking into account the notion that behaviour is especially likely to be the outcome of the immediate or a given 'environment' (Lewin, 1951; Barker, 1968; and Skinner, 1974). Because, note also that situations change from time to time and situations vary from place to place. Thus the techniques employed by the present study are more suitable to such an analysis. But, mean, standard deviation (SD) and chi-square test (x^2) may show statistical insignificant position of a particular condition for one place, yet for another the condition in question might be something implying. The formal secondary schools in Britain today are in this kind of situation, particularly in terms of their physical settings (see HMI Reports, 1988- 1991) and as we shall see, the condition of schools differ and even classrooms within a school differ. So, given serious attention to situational and behavioural signs or evidence can, as Fontana (1985) points out, help identify the

positions necessary to maintain the structure of activities in the school. And mean, SD, X^2 will leave the question unanswered for some or other school, as noted above (in other words, problems in some schools would be undermined).

Fourth, Cohen and Manion (1989: p.38) have warned that considerable attention must be paid to the techniques used for interpretation of data; and such techniques should be focused on research question and type of data. The reason is that certain techniques are not appropriate for interpretation of certain kinds of data. Cohen and Manion (ibid) go on to stress that one of the main functions of techniques of data interpretation must be to give clear information. It is in this context that the present researcher chooses not to use certain statistical techniques, such as the units of mean, standard deviation and/or chi-square test, for interpretation of the data). As the data is mainly ordinal with some nominal (categorical) data.

Finally, since this being the first specific British study (in terms of systematic approach) into relationship between the physical environment of school and secondary pupils' behaviour, it was decided to present the information in a way that can make this particular relationship position fairly clear. Moreover, it should be noted, in terms of British secondary schools, as mentioned earlier (see Chapter 6), there have been differences of opinion on this topic of the school physical environment-pupil behaviour link. Thus, a direct experiences recording approach was considered more appropriate to understand whether or not relationships really occur. This study, in the main, was really designed to explore these differences of opinion. The rationale behind this is that educational studies such as this are a 'practical science' in the sense that we do not only want to know facts and to understand relations for the sake of knowledge, we want to know and understand in order to be able to act and act 'better' than we did before. Further, I will refer to this approach (real situation/direct acts) later when considering the relationship between attitude and behaviour. Furthermore, it should be noted that this approach is used not to deny the fact that statistics could also help in interpreting the data, but, as

Manion and Cohen (1989) state, certain types of understanding require qualitative analyses and this is the implication here.

RESULT OF THE FIELD STUDY 1

Questionnaire data

As already mentioned above, this project explored empirically the links between the physical environment of school and pupils' behaviour. This section of the report focuses on the data obtained by the questionnaire. The questionnaire contained a number of items about the physical school environment identified by the HMI reports (1988-1991) and other relevant literature. The items in the questionnaire examined British pupils (age range 13-15 years) and teachers of two secondary comprehensive schools' views on the importance of characteristics of the physical school environment, and how it affects pupils behaviour. A copy of the questionnaire is included in Appendix 5A for the pupil subjects and Appendix 5B for the teacher subjects.

Table 6: The questionnaire response rates

School	Pupils		Teachers	
	%	No.	%	No.
A	49.06	59	50	5
B	46.67	56	50	5
Total	95.83	115	100	10

Note: 1) A and B stands for school names as school names were kept anonymous.
2) Questionnaire distribution for pupils was 120 and teachers 10.
3) Percentages were calculated separately, as one of pupils and the other of teachers.

Table 6 above shows the percentage return of the questionnaire: of the 120 questionnaires to pupils, and 10 to teachers was high for analytic value, yielding the kind of information that benefits the aim of the investigation. Outcomes are presented below.

Question 1: "How long have you been a student in this school?" and for teachers, the phrase "teaching" was used instead of "a student".

This question was designed to determine the quality/validity in terms of range of time of the responses. As shown in Table 7 below (the pupils) and Table 8 below (the teachers), the respondents range from between periods of months – to 6 years plus. The majority of the pupils' 110 (95.6%) have been in their school for quite some time – more than two years.

Table 7: The pupils' responses to the question: "How long have you been a student in this school?"

Respondents	Length of time respondents have been in the school				Total	
	M Y 1-2	Y.M Y 2.1-4	Y.M Y 4.1-6	Y.M 6.1 or above	%	No.
Pupils (No.=115)	4.4%	95.6%	-	-	100%	115
Note: M – Month Y – Year Y . M – Year and a month						

Table 8: The teachers' responses to the question: "How long have you been a teacher in this school?"

Respondents	Length of time respondents have been in the school				Total	
	M Y 1-2	Y.M Y 2.1-4	Y.M Y 4.1-6	Y.M 6.1 or above	%	No.
Teachers (No.=10)	10%	30%	40%	20%	100	10
Note: M – Month Y – Year Y . M – Year and a month It should be noted at this point that in analysis of the responses to this questionnaire percentages used were referred separately as follows: i) 115 total return of the pupils and ii) 10 total returns of the teachers.						

Although these percentages indicate that the majority of respondents have spent a great deal of time in their school and are more likely to report valid/reliable experiences with the physical school environment, overall responses were widespread, thus the nature of the catchment cannot be discounted as explanatory parameters, as the subjects have very different lengths of time in their school and the data results from this . In other words, respondents with less experience of the school's life still have a relationship with the school and may hold favourable/unfavourable behaviour or attitudes towards the school.

As the Elton Report (1989:p.61) argues, it is usually very good to collect information from the subjects' experiences and, added to this, it was thought, some data obtained from pupils/teachers who have been in their school for less time, as they are part of the school community.

Question 2: "How much do you like the school?" (pupils) and for the teachers the question was phrased as follows: "How much do you think pupils like the school?"

The respondents recorded their answers on a five point scale: 'like very much'(1), 'like' (2), 'neither like nor dislike' (3), 'dislike' (4), and 'dislike very much' (5). There were mixed responses. The percentage for the pupils' responses are given in Table 9.

Table 9: The pupils' responses to the question: "How much do you like the school?"

School	Like very much		Like		Neither like nor dislike		Dislike		Dislike very much		Total	
	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
School A	1.74	2	21.74	25	23.5	27	0.87	1	0.87	1	48.7	56
School B	0.87	1	16.52	19	24.3	28	8.7	10	0.87	1	51.3	59
Total	2.6	3	38.3	44	47.8	55	9.6	11	1.74	2	100	115

40.87 percent of the sample pupils indicate that they 'like very much' or 'like' their school. A noticeable 11.33 percent of the pupils state that they 'dislike very much' or 'dislike' their school. The percentage of the undecided responses is also large (47.8%). Overall, although a large proportion of the pupils indicated positive feelings toward their school, most pupils (59.13%) do not identify strongly with their school.

Separating responses according to the sample secondary schools: the pupils in secondary school B (school names were kept anonymous) have more negative feelings (9.57%) towards school that do the pupils in secondary school (1.74%). The difference is quite large. It should be noted that this school differences confirms what most people probably would have predicted, it appears in several studies (Rutter et al, 1979l; Tattum, 1986; HMI Reports on individual secondary school, 1988-1991) and will be part of the subject of further comment in this and subsequent chapters.

Table 10: The teachers' responses to the question: "How much do you think pupils like the school?"

School	Like very much		Like		Neither like nor dislike		Dislike		Dislike very much		Total	
	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
School A	-	-	30	3	20	2	-	-	-	-	50	5
School B	-	-	20	2	30	3	-	-	-	-	50	5
Total	-	-	50	5	50	5	-	-	-	-	100	10

It must be remembered that the comments on Table 10 are based on ten respondents. Even though the sample is small, the data is included in the analysis.

Table 10 contains the responses from the sample teachers. One-half of the secondary school teachers (50%) remain (like other respondent pupils) undecided. The other half (50%) of the respondent secondary teachers indicate that pupils like their school. No perception of the teachers clearly reflect towards pupils particularly disliking the schools, but in view of pupils' data (above) this seems to be the case. It seems interesting and it would seem to suggest that 'some teachers' may not be so exact in judging certain attitudes of their pupils (I have used the phrase 'some teachers' here because the sample was small). Of course, also, the fact that a large proportion of the sample teachers remained undecided (unaware) means that it is impossible for the teachers to achieve perfect accuracy (100 percent "hit") or perfect inaccuracy (100 percent misses) in their prediction of pupils' attitudes or 'psychological dynamics'. In other words, in view of the present findings, it is safe to say that the teacher typically does not know all there is to know about his/her pupils' attitudes towards school or 'psychological- dynamics' concerning school matters; and rather important is perhaps to involve both pupils and teachers in a systematic analysis. It should be stressed here that this data should be treated with caution – especially, given the small sample size, not be generalised.

In general, the different opinions of both pupils' and the teachers appear interesting; particularly pupils failing to identify strongly with their school.

Question 3: "In general when you are judging whether you like a school or not, how important are the following elements?" for the pupils – and the teachers were asked the same question, however, in a different phraseology as follows: "The following are some of the more frequently quoted elements of school. Please indicate the degree of importance you, as a professional teacher, attach to each of these elements to judge whether pupils would like a school or not."

This question contained a list of 12 elements, very often quoted by British studies (see the HMI Report, 1988-1991; Elton Report, 1989) dealing with school life. I should make it clear that question 2 of the questionnaire (analysed above) dealt with the pupils' general liking/disliking for their school; whereas question 3 is concerned with a somewhat more specific evaluation: That is to understand the reason why pupils might not identify strongly or identify very strongly with their schools; and might this be something connected with the environment of school? In accordance with this, the main aim of this question was to determine position of the physical school environment. At this point data from the two sample schools were combined for the analysis.

Table 11: The pupils' responses to the question: "In general when you are judging whether you like a school or not, how important are the following elements?" (Number or respondents: 115)

The elements	Very important		Important		Not sure		Not important		Not at all important	
	%	No.	%	No.	%	No.	%	No.	%	No.
i) Teacher	50.43	58	43.5	50	5.2	6	-	-	0.87	1
ii) Examination results	53.9	62	41.7	48	1.74	2	0.87	1	1.74	2
iii) Academic facilities	37.4	43	46.5	65	1.74	2	2.1	3	1.74	2
iv) Pupils' obedience	25.22	29	49.6	57	18.3	21	3.5	4	3.5	4
v) Class size	9.6	11	32.2	37	36.5	42	17.4	20	4.4	5
vi) Uniform	6.1	7	26.1	20	20	23	29.6	24	18.3	21
vii) Sports facilities	21.1	30	46.1	53	22.6	26	3.5	4	1.74	2
viii) Quality of furniture	8.7	10	49.5	57	24.4	28	14.8	17	2.6	3
ix) Quality of decoration	7.83	9	37.4	43	39.13	45	10.4	12	5.2	6
x) Orderly environment	15.7	18	43.5	50	33.9	39	5.2	6	1.74	2
xi) Noise level	12.2	14	48.2	54	28.7	33	11.3	13	0.87	1
xii) Standard of cleanliness – litter, state of buildings	41.7	48	45.2	52	11.3	13	0.87	1	0.87	1

Table 11 above shows responses of the sample pupils for each of the 12 elements. 95.6% responded to 'very important' or important with examination results. As for those who attached 'very important' or 'important' with academic facilities their figure amounts to 93.9% and this similar figure (93.9%) of 'very important' or 'important' was with teachers' importance. Other elements whose figure of 'very important' or 'important' that amount to a high percentage of importance were: standard of cleanliness – litter, state of buildings 86.9%, pupils' obedience 74.92%, sports facilities 72.2%, noise level 60.4%, orderly environment 59.2%. Quality of furniture (58.2%) and quality of decoration (45.2%) ranked a close high on the 'very important' or 'important' measure but they also received a good many negative responses. While the uniform figure of 'not at all important' or 'not important' measure amount to 47.9% above the other elements. Overall, although certain elements score higher percentages on the 'very important' and 'important' measure, all the elements receive many positive responses and differences in level of percentage seems to explain the sample pupils' differences in making judgments – very complex.

Table 12 lists the percentage responses obtained on this task (of the importance of elements of school to pupils for judging whether or not they would like the school) from the teachers. 80 per cent of the sample teachers responded 'very important' or 'important' with three different elements: 1) teachers, 2) classroom size, and 3) standard of cleanliness – litter, state of buildings as reference to pupils' liking of a school or not. The majority of the elements received moderately high percentage responses ranging from 40% to 70% of 'very important' or 'important' respectively.

Table 12: The teachers' responses to the question: "The following are some of the more frequently quoted elements of school. Please indicate the degree of importance you, as a professional teacher, attach to each of these elements to judge whether pupils would like a school or not." (Number of respondents: 10)

The elements	Very important		Important		Not sure		Not important		Not at all important	
	%	No.	%	No.	%	No.	%	No.	%	No.
i) Teacher	70	7	10	1	10	1	10	1	-	-
ii) Examination results	30	3	30	3	40	4	-	-	-	-
iii) Academic facilities	30	3	30	3	40	4	-	-	-	-
iv) Pupils' obedience	30	3	40	4	30	3	-	-	-	-
v) Class size	60	6	20	2	20	2	-	-	-	-
vi) Uniform	30	3	30	3	40	4	-	-	-	-
vii) Sports facilities	30	3	10	1	-	-	60	6	-	-
viii) Quality of furniture	30	3	10	1	40	4	20	2	-	-
ix) Quality of decoration	30	3	20	2	40	4	10	1	-	-
x) Orderly environment	30	3	20	2	50	5	-	-	-	-
xi) Noise level	30	3	40	4	30	3	-	-	-	-
xii) Standard of cleanliness – litter, state of buildings	30	3	50	5	10	1	10	1	-	-

Overall results of question 3, so far as it can be seen (Table 11 and Table 12 above) both pupils and teachers tend to link the pupils liking or not of their school with elements within the school. However, the situation is more complex. First, differences do seem to exist among pupils in terms of what specific features of school life they regard important so as to identify with the school. The second example is that a considerable number of respondents remain undecided on this point. In order to make the definition as unambiguous as possible, and this to increase the ease with which the findings can be discussed, this will be the subject of further comment later in this chapter. But one noticeable point with the findings and perhaps the most important (interpretation for the main research question) is opening of an understanding of what the physical school environment means to the pupils. Standard of cleanliness – litter or state of buildings, academic material resources, sports facilities, noise level, quality of furniture, quality of decoration, class size, uniform – all these were given the indication (prominence) that they merit, for the pupils in judging their liking of a school.

Question 4: "Below is a list of 10 important aspects of the physical environment of school. Please write 1, 2 and 3 against the three most important things for you. Please explain why." This same question was asked to the teachers, but in the following saying: "Below is a list of 10 important aspects of the physical environment of school. Please write down 1, 2 and 3 against three most important things you, as experiential teacher of pupils' behaviour management, think are to your pupils. Please explain why."

This question was specific to analysis of what priorities of importance are given to different elements of the physical environment of school. The 10 listed items were the original HMI (1988-91) published ones. Results: Table 13 presents the sample pupils' responses and Table 14 presents analysis of the sample teachers' perception of the attitude in the question. I will explain the results in turn and beginning with the sample pupils.

The data in Table 13 below shows attitudes were dissimilar among the sample pupils on what were the most important aspects of the physical environment of secondary school. However, considering the findings in terms of percentage, 'satisfactory equipments for subjects' were in first place for many of the respondent pupils 27.8% (number 30); close to this in amount of the figures rated most important (26.1%) was lavatory; 24.4% of the pupil respondents characterised themselves as placing lighting and heating in the first position of importance; another 11.3% saw sports facilities as first in position of a ranking response. Only in high quality of furniture and classrooms with carpets was there any aspect of the physical environment of school not placed in the first position of most importance in a ranking response. Even so, taking the three most important positions together "high quality of furniture fittings" sows considerable figure of 9.6% and "classrooms with carpets" 5.3%. This outcome seems to show that pupils show concern for different physical school elements, though level of their concern differs.

Turning to the responses of the teacher subjects, the analysis in Table 14 below is quite detailed; so it was felt not to 'repeat' the position. But, one piece of information needs to be explained – that is in the question 2 analysis (summarised in Table 9 and 10 above)

it was noted that the respondent teachers did not indicate certain feelings about their pupils' experience and the similar evidence appeared here (the teachers did not display the same level of awareness about pupils' opinions). Nice decoration and pleasant buildings were not at all ranked by the respondent teachers, in any of the three priority positions of most importance, which is quite inconsistent with the results of the pupils' responses.

In this particular question, findings of both the sample pupils and teachers were not clear cut (complex) – what some of the respondents ranked in position three of the most important was ranked in first or second position by the others. This analysis is also summarised in Figure E of the sample pupils and Figure F of the sample teachers, reveals that while some differences in the 'physico-environment' attitudes do emerge the relationships are impressive and high ranking.

Table 13: The pupils' responses to the question: "Below is a list of 10 important aspects of the physical environment of school. Please write 1, 2 and 3 against the three most important thing for you." (Number of respondents: 115)

Elements	Position 1		Position 2		Position 3		Total	
	%	No.	%	No.	%	No.	%	No.
i) Tidy classroom	4.4	5	6.1	7	6.1	7	16.5	19
ii) Lavatories	26.1	30	16.5	19	15.7	18	58.3	67
iii) Nice decoration	2.6	3	4.4	5	-	-	7	8
iv) Lighting and heating	24.4	28	24.4	28	25.2	29	74	85
v) Library service	1.74	2	7.8	9	8.8	10	18.2	21
vi) Classrooms with carpets	-	-	1.74	2	3.5	4	5.2	6
vii) Pleasant buildings	1.74	2	7	8	13	15	31.74	25
viii) High quality furniture fittings	-	-	4.4	5	5.2	6	9.6	11
ix) Satisfactory equipment resources for subjects	27.8	32	10.4	12	13	15	51.3	59
x) Sports facilities	11.3	13	17.4	20	9.6	11	34.3	44
Total		115		115		115		345

Table 14: The teacher's response to the question: "Below is a list of 10 important aspects of the physical environment of school. Please write down 1, 2 and 3 against the three most important things you, as a teacher with experience in behaviour management of pupils, think are to your pupils." (Number of respondents: 10)

Elements	Position 1		Position 2		Position 3		Total	
	%	No.	%	No.	%	No.	%	No.
i) Tidy classroom	10	1	10	1	10	1	30	3
ii) Lavatories	10	1	10	1	60	6	80	8
iii) Nice decoration	-	-	-	-	-	-	-	-
iv) Lighting and heating	60	6	-	-	-	-	60	6
v) Library service	-	-	-	-	10	1	10	1
vi) Classrooms with carpets	-	-	10	1	-	-	10	1
vii) Pleasant buildings	-	-	-	-	-	-	-	-
viii) High quality furniture fittings	10	1	-	-	-	-	10	1
ix) Satisfactory equipment resources for subjects	10	1	70	7	-	-	80	8
x) Sports facilities	10	1	70	7	-	-	80	8
Total		10		10		10		30

As noted earlier, part of this question (4) under analysis asked the subjects to give reasons for the priorities of importance they have given to the elements. Here, then, are a selection of comments connected with the elements. Each makes interesting reading and together they

Figure E
Data summary for Table 13

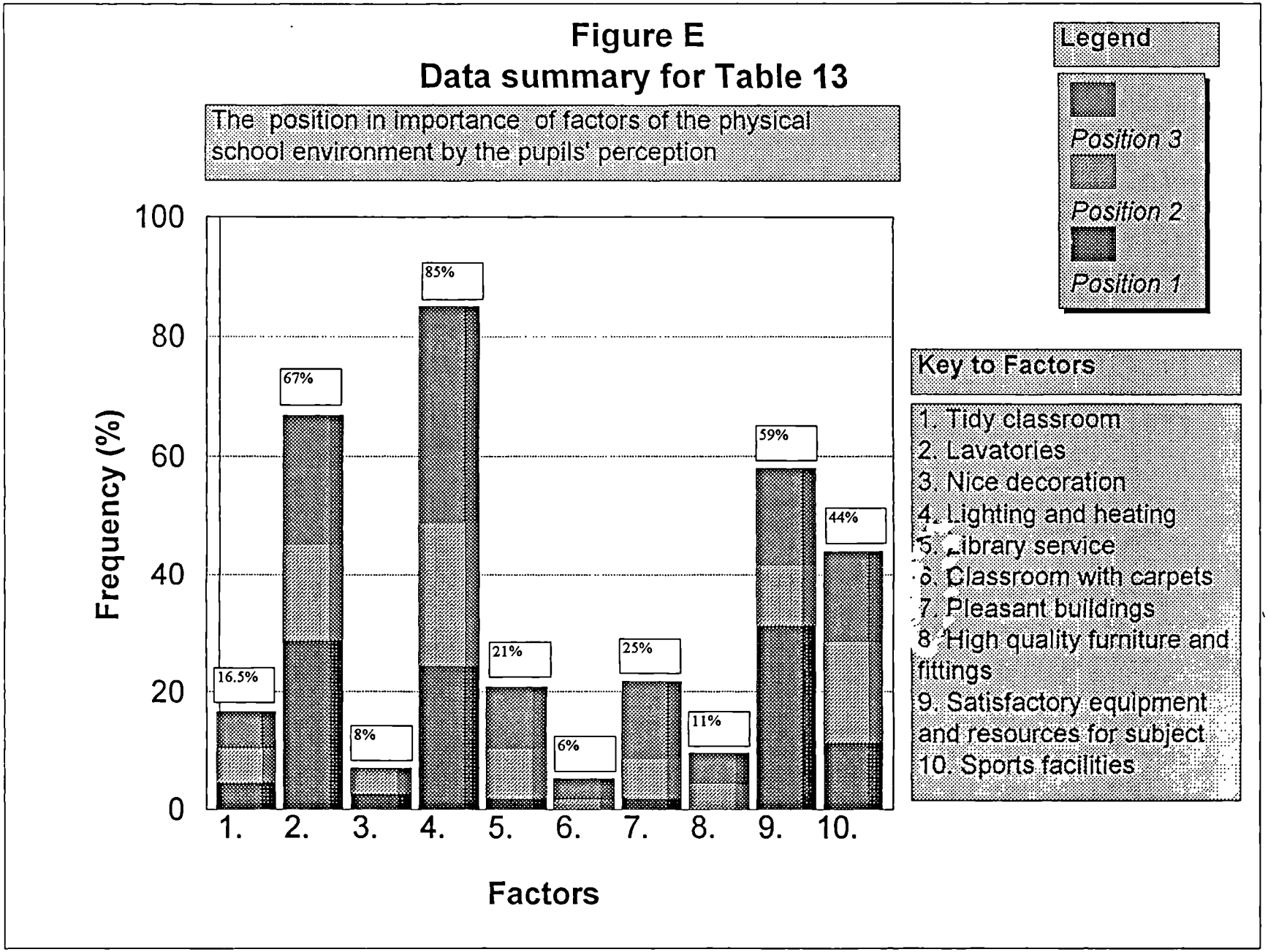
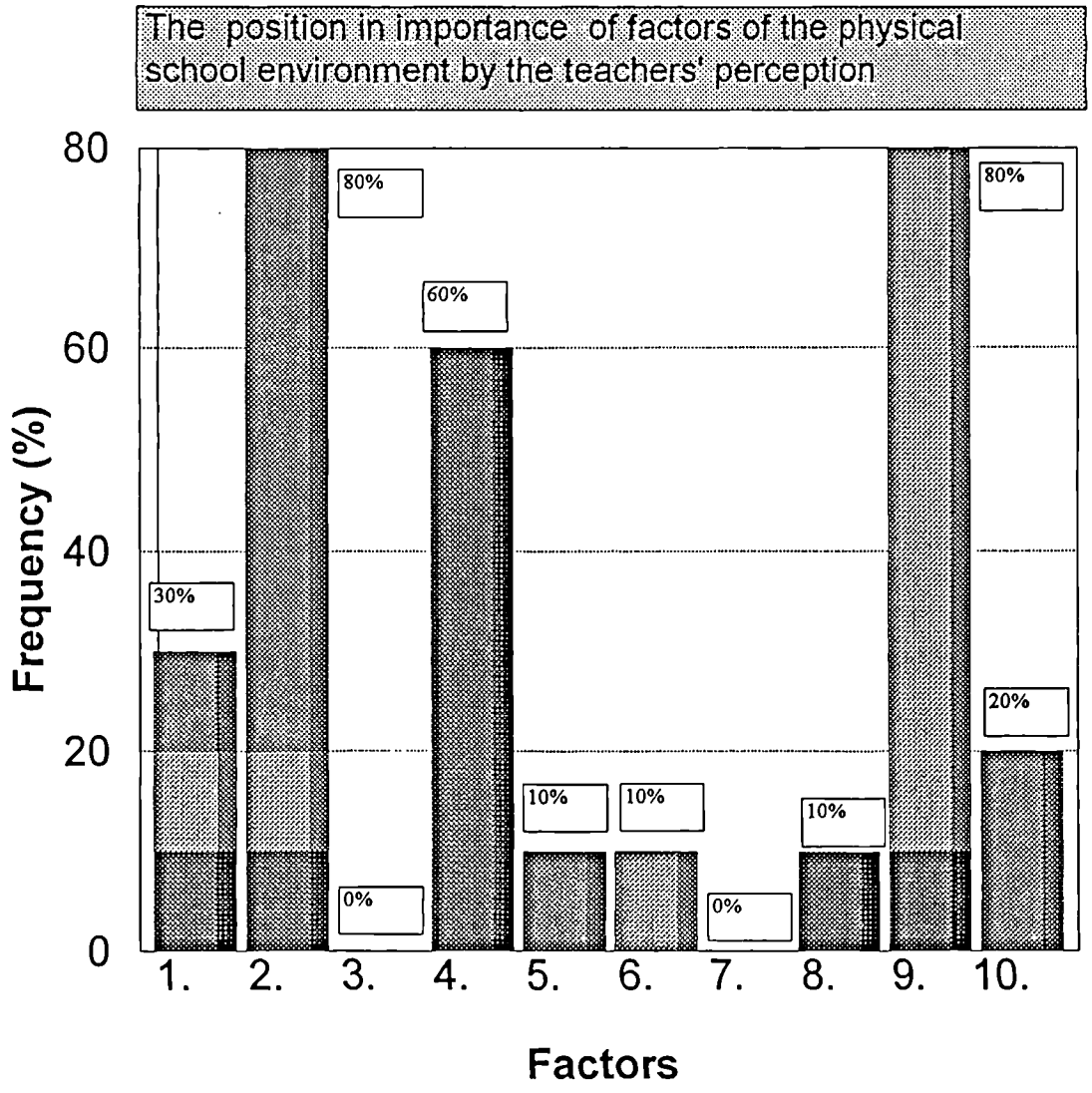


Figure F
Data summary for Table 14



Legend

- Position 3
- Position 2
- Position 1

Key to Factors

1. Tidy classroom
2. Lavatories
3. Nice decoration
4. Lighting and heating
5. Library service
6. Classroom with carpets
7. Pleasant buildings
8. High quality furniture and fittings
9. Satisfactory equipment and resources for subject
10. Sports facilities

Note: It must be noted that without Table 14, this summary would have been impossible.

provide striking evidence of the pupils' feeling connected with characteristics of the physical environment of school, and/or evidence of impact that the physical environment of school may have on the pupils' lives. The percentage evidence is given in brackets and this is exceptionally used where respondents have said the same things but all were considered equally as data. They are as follows:

The pupils:

"I wouldn't be comfortable at school if I was too cold or hot or couldn't see properly and so it mustn't get dark." (33.9%)

"The toilets are the most important because they should be hygienic and clean, in fact toilets smell." (15.7%)

"You are able to work hard if you have nice classrooms with carpets. Also carpets in classrooms help a better school environment to develop." (4.3%)

"It makes you feel more confident when working in a pleasant school which has a comfortable atmosphere." (2.6%)

"Lighting and heating are important because if you are cold you cannot work properly." (3.5%)

"Too cold anyway at school." (0.87%)

"If school is scruffy, you don't want to come." (1.74%)

"because when the school is a nice place to work in and appeals to you, it makes you work better and look forward to coming." (0.87%)

"Lavatories are important because some of my friends have toilet problems." (0.87%)

"Overall I am pleased with the standard of our school, although I would like to see improvements in the toilet facilities." (0.87%)

"To make me like a school it should be appealing because I couldn't enjoy P.E. if there weren't proper facilities and the building would have to be comfortable and pleasant." (2.6%)

"I need sports facilities for good P.E., heating so the rooms are not cold and the library so we can do our work properly." (0.87%)

"I like sports, daily use sports facilities." (0.87%)

"Some subjects need special resources, i.e. maths and heating is very important in winter." (0.87%)

"If the environment is satisfactory then it may make us try harder; It also makes the school look nice." (1.74%)

"If the toilets are dirty you don't really want to use them." (1.74%)

"Sports facilities are important in the first place, because to enjoy P.E. more." (0.87%)

"If you do not have the academic facilities it will be harder for you to concentrate." (0.87%)

"It's too cold at school anyway. Because why you come to school in the first place." (1.74%)

"If students have equipment and a good library service, they will have a good chance in doing well in their exams." (1.74%)

"We need equipment to help us with our education." (0.87%)

"Heating is important for winter and the library service is important for help in different subjects." (3.5%) (a composite response)

"It is important that the pupils aren't cold because they will be concentrating more on trying to keep warm." (0.87%)

"When you're at school you want to be relaxed and in a pleasant environment. This effects the way you work." (1.74%)

"It would be cold and dark without lighting and heating you need – and library services is good for information and sports facilities, I love sports." (0.87%)

"You must think of your well being first. Makes it disgusting if toilets have cigarette ends all over in the toilets. You can also work better if rooms are kept heated, especially in winter – subjects are most important in a school so good equipment is needed." (1.74%)

"I love having sports and trying to keep fit. I go to the toilet and I would like them clean, not like our toilets." (0.87%)

"I think the toilets should have locks on the door, smell nice and have toilet paper. They should not just have puddles on the floor." (0.87%)

"Satisfactory equipments, so you can learn well and that you can do research and you will feel relaxed in a pleasant building, and also people will be attracted to the school." (0.87%)

"I need good equipment to work with and need toilets." (0.87%)

"Some people do not appreciate certain things which can make you change your attitude about the things. If there are good furniture the pupils will want to learn." (1.74%)

"It makes you feel better in a comfortable and pleasant atmosphere." (0.87%)

"It is important to have a good learning atmosphere and good equipment or else people wouldn't be able to learn anything." (1.74%)

"Because if you are in a nice environment, it makes you want to work better." (8.7%)

"Physical things such as playgrounds are important because resources help, so pupils have the proper P.E. equipments." (0.87%)

A further observation to make of these comments from the pupils is that some of the pupils' expectations tend to relate to home conditions – such as "if it is not warm, you don't want to come." Also the comments seemed to relate to a number of things: learning, health, exams, interest in coming to school and happiness. Similar comments were made by the sample secondary school teachers:

"I believe a pleasant, well-equipped environment encourages a good attitude among students. They appreciate a clean, happy area." (20%)

"1) Pupils always complain if they are cold and do not settle down to work. 2) Without adequate resources, subjects are difficult to teach. 3) Pupils are most concerned about lavatories and not happy when they are in a poor state." (30%)

"1) Students need to feel comfortable in a well-heated room. 2) Sports facilities are essential for letting off steam, keeping them fit and for their general well-being." (20%)

"Pupils hate sharing things. If toilets are unpleasant, many students will not use them." (20%)

Overall, the reasons that both the pupil and teacher respondents identified for the position of importance they had given to elements of the physical school environments can be summarised as follows:

- that the physical environment of school promotes feelings of comfort, good attitude and health;
- the teachers felt that pupils do not feel settled in a cold classroom environment;
- the pupils felt that the physical environment of school either generates or undermines their interest in coming to school;

- the teachers felt that unclean areas posed complaint problems;
- all the respondents felt that adequate resources for subjects can promote effectiveness in teaching and learning;
- all the respondents felt that dirty toilets disabled pupils' happiness and they may not use it;
- both the pupils and teachers felt that sports facilities were essential and that it can improve good relationships in the school.

The data, as can be seen, revealed a great deal of information, in particular, the value associated with the material aspects of the school environment are deeply rooted in the school attainment of pupils and reflect both the pupils and teachers expectations of its conditions.

Question 5 was phrased the same way for both the pupil and teacher subjects, as follows: "You know, different schools have different conditions of its physical environment. In your school how do you rate the following facilities?"

The subjects were asked to respond to 20 factors of the physical secondary school environment, drawn from either Rutter et al (1979) or the Elton Report (1989) and HMI Reports (1988-1991). The factors were measured by this five point scale: 'very satisfactory', 'satisfactory', 'not sure', 'dissatisfactory' and 'very dissatisfactory'.

Table 15 below lists the percentage of responses obtained on this task from the pupils in each of the two surveyed secondary schools. 20% of the sample of pupils were 'very dissatisfied' (plus 29.6% dissatisfied) of the seventeenth statement in the table (15); deep concern followed by another 44.3% who indicated the same 'very dissatisfied' or 'dissatisfied' about toilet provision; the evidence on heating indicated 23.7% 'very dissatisfied' or 'dissatisfied'; 32% felt 'very dissatisfied' or 'dissatisfied' with provision of heating.

Table 16 below shows the percentage of responses obtained from the sample secondary school teachers. The teachers indicated very dissatisfactory or dissatisfactory with accommodation of subjects (in terms of room) 90%; heating 70%; corridors and stairs 70%; storages 60%; material resources for subjects 60%; the school ground 50%; assembly hall 50%; location of school area 50%. An interesting finding in form of contrast are although the pupils saw that toilet provision of the school as presenting a problem, the sample teachers did not – 100% of the teachers said it was very satisfactory or satisfactory (despite their own statement quoted earlier in these findings).

Also, as it can be seen, both Tables 15 and 16 are presented, on separate sheets below (as they are wide in space), in terms of individual school standards of the issue. Several new areas in terms of differences between schools arises. The figures in Table 15 (of the sample pupils) shows that toilet provision in school B was felt to be 'very dissatisfactory' or 'dissatisfactory' 43.4% compared to school A – only 0.87% (rather 47.6% as very satisfactory or satisfactory).

As for the percentage of teachers, Table 16 (seen in terms of analysis of differences between the schools) shows very dissatisfactory and dissatisfactory 50% with location area of School B, in contrast it shows very satisfactory or satisfactory with the same percentage of school A. As in an inquiry, there are people who do not make up their minds. In the present instance, at certain points the teachers were not sure (this issue also appeared in the above analysed questions), but in varying degrees, some figures lower, others very high. For example 70% of the teachers remain indecisive on the issue of standards of cleanliness and maintenance, while only 10% in the case of lighting.

In summary, the preceding paragraphs suggest that there is directed awareness of the physical school environment standards (quality) among pupils and teachers. Their awareness particularly provides encouraging data. Overall, the sample respondents were divided, some indicating clear satisfaction and others clear dissatisfaction. This difference in response was confirmed by more direct analysis of differences between the respondents

Table 15: The pupils responses to the question: "You know, different schools have different conditions in terms of its physical environment. In your school, how do you rate the following facilities?" (Number of respondents: 115)

Factors	Very satisfactory				Satisfactory				Not sure				Dissatisfactory				Very dissatisfactory			
	School				School				School				School				School			
	A		B		A		B		A		B		A		B		A		B	
	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
1) Toilet provision	25.2	29	-	-	22.6	26	4.4	5	-	-	3.5	4	-	-	16.5	19	0.87	1	26.9	31
2) Class size	3.4	4	1.74	2	26.1	30	38.3	44	17.3	20	9.5	11	0.87	1	1.74	2	0.87	1	-	-
3) Location of school area	7.8	9	10.4	12	26.1	30	32.1	37	11.3	13	4.4	5	2.6	3	4.4	5	0.87	1	-	-
4) Furniture fittings	10.4	12	3.5	4	38.3	44	26.1	30	1.74	2	13	15	0.87	1	0.87	1	0.87	1	-	-
5) Library service	20	23	4.4	5	20	23	24.5	28	6.1	7	18.3	21	1.74	2	4.4	5	0.87	1	-	-
6) State of buildings	9.6	11	0.87	1	31.3	36	38.3	44	4.4	5	7.8	9	1.74	2	4.4	5	1.74	2	-	-
7) Decoration	9.6	11	3.5	4	24.3	28	18.3	21	13.9	16	10.4	12	-	-	19.1	22	0.87	1	-	-
8) Storage	6.1	7	1.74	2	28.6	33	26.1	30	11.3	13	23.5	27	1.74	2	-	-	0.87	1	-	-
9) Display	12.2	14	6.1	7	25.2	29	23.5	27	7	8	14.7	17	3.5	4	2.6	3	3.5	4	0.87	1
10) Sports facilities	25.2	29	10.4	12	19.1	22	31.3	36	4.4	5	5.2	6	-	-	6.1	7	-	-	-	-
11) Classroom floor	23.5	27	5.2	6	23.5	27	29.5	34	0.87	1	11.3	13	-	-	5.2	6	0.87	1	-	-
12) Material resources for subjects	12.2	14	3.5	4	28.6	33	26.9	31	7	8	16.5	19	-	-	1.74	2	0.87	1	2.6	3
13) Corridors and stairs	3.4	4	0.87	1	27.8	32	28.6	33	7	8	12.2	14	7	8	0.87	1	2.6	3	2.6	3
14) Accommodation of subjects (in terms of rooms)	7	8	3.5	4	25.2	29	13.9	16	13.9	16	13	15	1.74	2	2.6	3	0.87	1	-	-
15) Assembly Hall	5.2	6	7.8	9	24.4	28	38.3	44	11.3	13	1.74	2	6.1	7	2.6	3	1.74	2	-	-
16) Heating	4.4	5	6.1	7	27.8	32	20	23	6.1	7	13	15	5.2	6	3.5	4	5.2	6	1.74	2
17) Signposts	-	-	-	-	11.3	13	1.74	2	20	23	17.4	20	8.7	10	20.9	24	8.7	10	11.3	13
18) Lighting	10.4	12	5.2	6	31.3	36	31.3	36	3.5	4	8.7	10	0.87	1	20.8	24	2.6	3	-	-
19) Standards of cleanliness and maintenance	10.4	12	1.74	2	27	31	7	8,7	8	20	23	3.5	4	6.1	7	0.87	1	6.1	7	
20) The school grounds	9.6	11	8.7	10	20	23	25.2	29	13.9	16	13	15	4.4	5	16.5	19	0.87	1	4.4	5

Table 16: The teachers' responses to the question: "You know, different schools have different conditions in terms of its physical environment. In your school how do you rate the following facilities?"

Factors	Very satisfactory				Satisfactory				Not sure				Dissatisfactory				Very dissatisfactory			
	School				School				School				School				School			
	A		B		A		B		A		B		A		B		A		B	
	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
1) Toilet provision	50	5	30	3	-	-	20	2	-	-	-	-	-	-	-	-	-	-	-	-
2) Class size	20	2	-	-	30	3	20	2	-	-	-	-	-	-	30	3	-	-	-	-
3) Location of school *area*	-	-	-	-	50	5	-	-	-	-	-	-	-	-	50	5	-	-	-	-
4) Furniture fittings	20	2	20	2	-	-	20	2	10	1	-	-	20	2	10	1	-	-	-	-
5) Library service	40	4	30	3	-	-	-	-	-	-	-	-	10	1	20	2	-	-	-	-
6) State of buildings	30	3	-	-	20	2	30	3	-	-	-	-	-	-	20	2	-	-	-	-
7) Decoration	40	4	10	1	-	-	20	2	-	-	-	-	10	1	10	1	-	-	10 ,1	
8) Storage	-	-	-	-	20	2	20	2	-	-	-	-	20	2	30	3	10	1	-	-
9) Display	-	-	-	-	30	3	40	4	20	2	10	1	-	-	-	-	-	-	-	-
10) Sports facilities	30	3	20	2	20	2	30	3	-	-	-	-	-	-	-	-	-	-	-	-
11) Classroom floor	40	4	30	3	10	1	20	2	-	-	-	-	-	-	-	-	-	-	-	-
12) Material resources for subjects	-	-	-	-	20	2	20	2	-	-	-	-	10	1	20	2	20	2	10	1
13) Corridors and stairs	10	1	-	-	10	1	10	1	-	-	-	-	20	2	20	2	10	1	20	2
14) Accommodation of subjects (in terms of rooms)	10	1	-	-	-	-	-	-	-	-	-	-	20	2	20	2	20	2	30	3
15) Assembly Hall	10	1	-	-	10	1	-	-	-	-	30	3	30	3	20	2	-	-	-	-
16) Heating	-	-	-	-	-	-	20	2	-	-	10	1	40	4	20	2	10	1	-	-
17) Signposts	10	1	10	1	10	1	10	1	-	-	20	2	20	2	10	1	10	1	-	-
18) Lighting	20	2	10	1	10	1	10	1	10	1	-	-	10	1	30	3	-	-	-	-
19) Standards of cleanliness and maintenance	10	1	10	1	-	-	-	-	30	3	40	4	10	1	-	-	-	-	-	-
20) The school grounds	-	-	-	-	-	-	-	-	20	2	30	3	30	3	20	2	-	-	-	-

within schools, and between schools, as shown by the high percentages (see Tables 15 and 16). Even so, the evidence increasingly indicated complexities in that the findings identified a school with very satisfactory in one aspect and very dissatisfactory in another. For example, in Table 15 – School A shows no indication of dissatisfaction with sports facilities, while it has 17.4% indicating dissatisfaction with signposts. Another example to cite in the same table concerns School B – storage in indicated with 0% dissatisfaction and signposts with 32.2% dissatisfaction. This is particularly very interesting – are all these pupil-teacher awareness related to the claim that the physical settings of the school was an important target-setting for teaching, learning and encouraging a good attitude, as outlined earlier. Also, the dilemma is that a few of the respondents believe that their schools were somewhat good. More accurately, the problem will be that the extent of flexibility is needed to meet all the standards to which the school system ought to adopt.

Question 6: "How do you think each of the following would affect your behaviour if they existed in your school?" Phrased as follows for the teachers: "What effect do you think the following would have on your pupils if they existed in your school."

Table 17: The pupils' responses to the question: "How do you think each of the following would affect your behaviour if they existed in your school?" (Number of respondents: 115)

Items	Better		Good		Not sure		Badly		Worse	
	%	No.	%	No.	%	No.	%	No.	%	No.
1) Attractive school buildings	35.7	41	47.8	55	16.5	19	-	-	-	-
2) Slippery classrooms	3.5	4	27	31	20.9	24	30.4	35	18.3	21
3) Teaching in dining hall	4.4	5	9.7	11	36.5	42	30.4	35	19.1	22
4) Library service not satisfactory enough	1.74	2	31.3	36	27	31	30.4	35	9.7	11
5) Leaking roof	2.6	3	15.7	18	14.8	17	34.9	40	32.2	37
6) Suitable heating	37.4	43	39.1	45	19.1	22	2.6	3	1.74	2
7) The walls full of graffiti	5.2	6	25.2	29	20.9	24	22.6	26	26.1	30
8) Reasonable class size	35.7	41	45.2	52	17.4	20	1.74	2	-	-
9) Attractive decoration	32.2	37	47.8	55	14.8	17	1.74	2	3.5	4
10) Broken windows	4.4	5	13.9	16	23.5	27	25.2	29	33	38
11) Insufficient material resources for subjects	8.7	10	8.7	10	21.7	25	26.1	30	34.9	40
12) Comfortable furniture fittings	46.1	53	32.2	37	16.5	19	3.5	4	1.74	2
13) Not enough proper sports facilities provided	3.5	4	20	23	25.2	29	30.4	22	32.2	37
14) Too many litter bins	21.7	25	52.2	60	20.9	24	5.2	6	-	-
15) Open landscape school areas	33	38	35.7	41	24.3	28	0.87	1	6.1	7

This question was designed to assess the subjects' attitude to characteristics of physical school environment, specifically it analyses the relationship between the physical environment of the school and pupils' behaviour. The subjects were asked to respond to 15 items of the physical environment of the school drawn from Rutter et al (1979) or the Elton Report (1989) or HMI reports (1988- 1991). The technique of measurement used for this purpose was five-point scale ('better', 'good', 'not sure', 'badly', and 'worse'). The data are presented in Table 17 above of the sample of secondary school pupils' and Table 18 below of the teachers.

Table 18: The teachers' response to the question: "What effect do you think the following would have on your pupils' behaviour if they existed in your school?"

Items	Better		Good		Not sure		Badly		Worse	
	%	No.	%	No.	%	No.	%	No.	%	No.
1) Attractive school buildings	30	3	50	5	20	2	-	-	-	-
2) Slippery classrooms	-	-	-	-	-	-	50	5	50	5
3) Teaching in dining hall	-	-	-	-	-	-	30	3	70	7
4) Library service not satisfactory enough	-	-	30	3	10	1	30	3	30	3
5) Leaking roof	-	-	-	-	20	2	30	3	50	5
6) Suitable heating	100	10	-	-	-	-	-	-	-	-
7) The walls full of graffiti	-	-	-	-	20	2	30	3	50	5
8) Reasonable class size	70	7	30	3	-	-	-	-	-	-
9) Attractive decoration	50	5	20	2	30	3	-	-	-	-
10) Broken windows	-	-	-	-	-	-	50	5	50	5
11) Insufficient material resources for subjects	-	-	-	-	-	-	50	5	50	5
12) Comfortable furniture fittings	50	5	50	5	-	-	-	-	-	-
13) Not enough proper sports facilities provided	30	3	20	2	-	-	50	5	-	-
14) Too many litter bins	-	-	100	10	-	-	-	-	-	-
15) Open landscape school areas	50	5	50	5	-	-	-	-	-	-

Many, over 93% of the pupils indicated 'attractive school building' (item 1) with better or good effect on their behaviour – only 16.5% were undecided on this particular item; suitable hearing – over 76% indicated it with better or good effect compared to only 4.3% who felt they would still behave badly or worse. On the other hand, the question of leaking roofs (item 5) 67.1% of the pupils indicated it with worse or bad effect on their behaviour; item 13 ("not enough proper sports facilities provided") was also indicated by a large number of pupils (62.6%) with worse or bad effect and only 23.5% indicated it with better or good effect. Other items which a large number of the pupils felt would effect their behaviour for worse or badly were: insufficient material resources for subjects 61%; broken windows 58.2%; teaching in dining hall 49.5%; slippery classrooms 48.7%; the walls full of graffiti 48.7%; and library service not satisfactory enough 40.1%.

While the teachers' results, particularly on item 1 (see table 18), life or behaviour of the pupils was 80% indicated with better or good and only 10% of the teachers felt not sure. 100% of the teachers felt that suitable heating would affect pupils' behaviour for the better. The same figure, but in terms of better plus good effect were indicated for reasonable class size, comfortable furniture fittings and open landscape school areas. 100% of the teachers indicated that many litter bins would have a good effect on pupils' behaviour. There were some conditions the teachers associate with disruptive behaviour:

- Slippery classroom 100%
- Teaching in dining room 100%
- Broken windows 100%
- Leaking roofs 80%
- Insufficient material resources for subjects 70%
- The walls full of graffiti 80%

There was divided opinion among the teachers on the question of "not enough proper sports facilities provided" with 50% indicating a worse or bad effect and 50% with better or good.

In general, apart from undecided responses, opinion fluctuation (for better or worse behaviour) appears to be determined by the quality standards of the items examined. Most responses are considerably high. From an attitudinal viewpoint, it would appear that there is the possibility of predicting the relationship between pupils' behaviour and the physical environment of school, in particular both pupils and teachers hold attitudes towards the physical school environment circumstances. (It should be noted the phrase "it would appear" because the results did not indicate the exact behaviour and the phrase interesting was used because there were two behavioural likeliness: "1) better/good and 2) worse/bad). Although the evidence also can seem to suggest that even if conditions

of the physical environment of school were poor, some children would stand it rather not misbehave. As for example, on the question of 'teaching in dining hall' (see Table 18 below) 4.4% of the pupils felt they would still behave better, and 3.5 indicated that even if the classrooms were slippery, they would maintain the behaviour which is better and 27% felt their behaviour will remain good. Too, as can be seen in the Table 18, some of the pupils indicated that even if the physical environment of the school were good enough, they would still behave worse or badly – nearly 4.3% of the pupils indicated suitable heating with worse or bad effects on their behaviour, and this means that however good heating conditions may be, this 4.3% of responding pupils would continue with disruptive behaviour. Thus, this consistency compared to the figures determined by the conditions of the physical environment of school itself, it can be said that in every human society there will always be a few groups of pupils who can be tolerant and others constantly disruptive, which seems to suggest that not all pupils respond to the same situation in a similar way and for success of school aims such differences need to be understood. In the main, it would appear, then, that both the pupils and teachers of the secondary schools are (as have been in the present research) willing to identify the physical environment of the school as an outstanding factor causing behavioural (discomfort and enjoyment) differences in the pupils. Also, although this is not the end of the present analysis, this seems a useful measurement and revealing in the sense that it suggests that if we know to what extent the school environment can influence the child's feelings/behaviour, we can, then, understand the child better or be able to deal with the child in more effective ways.

Question 7: Phrased the same way for both the pupils and teacher as follows: "Please read each of the following statements. Put one tick in the box which best shows how you feel about the statement, and note that there is also space for comments."

This question was designed to assess the subject's opinion concerning the inclusion of the physical school environment in the field of behaviour management in secondary schools. It also measured the subject's opinion about whether or not both secondary school pupils and teachers should be involved in decision-making on school matters – Thus, in respect of the present study, the focus was on furniture, academic facilities, including evaluation of the whole school premises. The subjects were asked to respond to seven statements formulated as a result of the massive review of the literature presented in the foregoing chapters of this thesis. The subjects responded in two ways: 1) they indicated their feelings on a five-point scale (strongly agree, agree, not sure, disagree or strongly disagree) and 2) they gave comments to support their responses, on the five-pint scale. The results are shown in Table 19 of the sample of secondary pupils and Table 21 of the sample of secondary teachers.

Responses to the statement – 'school buildings do not affect pupils behaviour' were: 34.9% of the pupil respondents and 80% of the teacher respondents indicated disagreement, while 40.9% of the sample pupils and 20% of the sample teachers endorsed this statement. The remaining 25.2% of the sample pupils were undecided. This finding is in striking contrast, thus we must be careful not to avoid the importance of relating school education with aim, in that all situations make certain actions possible and others impossible. As noted above, the respondents were also given the possibility to comment on their opinion. Both the teachers and pupils expressed very similar interesting and measurable attitudes towards the influence of 'school buildings upon pupils' behaviour':

A. Comments made by the pupils:

"I agree on bad buildings, bad pupils' behaviour."

"Bad looks, bad behaviour."

"I disagree because it affects some pupils."

"Students need to be comfortable."

"If school is scruffy, you don't want to come."

B. Comments made by the teachers:

"I know cramped conditions leads to disruptive behaviour."

"I strongly disagree because an ordered room improves discipline."

In the second statement there was not much difference between the pupils' and teachers' (please, keep an eye on Table 19 and Table 20 below). Over half of the sample pupils (59.2%) and 90% of the sample teachers disagreed that "a tidy classroom has nothing to do with pupils' behaviour". Only 14.8% of the pupils and 10% of the teachers endorsed the statement. In fact the only difference that did occur was (this much) 26.1% of the pupils remain undecided, but with the teacher respondents it was not the case – which seems to suggest that on certain conditions of school the teachers make clear cut judgments. Respondents had this to comment:

A. Comments made by the pupils:

"I strongly disagree because if it's untidy the children will misbehave."

"I disagree because there won't be much space."

"No space, you cannot concentrate."

"Because some pupils would mess around in classroom still."

"If it's untidy, you feel ashamed of the school."

B. Comments made by the teachers:

> "This is what people outside school can say. I believe untidy classrooms can create a poor impression."
>
> "An untidy classroom suggests a teacher who does not care."
>
> "I strongly disagree with this statement being written down, because inadequate buildings affect performance."

This result indicates clearly that most of the teachers and pupils were concerned about the tidiness of classrooms. Most respondents appear to have chosen it for work satisfaction and a scale for measuring behaviour.

The third item (see Table 19 and 20 below) is a more specific question dealing with teacher-pupil relationships as being more affected by the physical environment of school won affirmation of 70.4% of the sample pupils and 70% of the teachers (8.7% of the pupils and 20% of the teachers were undecided). Although 20.9% of the sample pupils and 10% of the teachers agree with the statement, but the data clearly shows (it is a noticeably high percentage) that deterioration of the physical school environment of school leads to deterioration of teachers' relationship with most pupils. Such attitudes might be explained by the respondents' comments:

A. Comments made by the pupils:

> "Shut up, the physical settings of environment, it does very much affect teacher-children relationships, especially when you complain of good surroundings."
>
> "Environment? Teachers and pupils may not like each other because of this."

B. Comments made by the teachers:

> "Pupils like/dislike of materials lead to messy contact."

These comments appear to indicate that both pupils and teachers consider the quality of teacher-pupil relations, in part, determined by the school's physical environment conditions.

Among the specific issues with regard to dimensions of the physical environment approach to behaviour was that the teachers' style of management of behaviour might be to a greater extent determined by the physical environment of school. A high percentage of the pupils (42.6%) and the teachers (60%) indicated strongly agreed or agreed with the view. As, in addition, one of the sample pupils stated that:

> "Yes, if the school looks untidy then the teacher may treat you badly."

And from another secondary pupil:

> "If it is a bad environment, the worse the behaviour and teachers tell you off for the environment."

Similarly, one of the sample secondary teachers commented:

> "I agree, the physical environment of school dictates teachers' management style, because in a poor environment there will be some constraint and teachers are to individual pupils for this to apply."

On the other hand, some respondents (a few), 25.2% of the pupils and 20% of the teachers, did not see the physical environment of school as much of an important factor in dictating teachers' style of behaviour management. No comments were given to support this disagreement. A remarkable percentage of the respondents remain undecided (32.2% of the pupils and 20% of the teachers). As suggested previously, it may be perhaps because some people are tolerant and others not to the same situation. Thus, for example, when I asked (not shown in the table and this was a friendly conversation during the time of administering the questionnaire) "How concerned are you about the crisis, if any, of the physical settings of school in dealing with pupils' behaviour?", the response was: "I have seen what material environment problems, both personal and with class (particularly with subject resources), can do to relationships – it tells what individual teachers' behaviour and care for the pupils. I hope that we can get ourselves together ... before it's too late."

The following comments were given by the sample pupils and teachers to suggest that the physical environment of the school can be a major concern when we develop the strategies for management of the secondary school pupils' behaviour:

A. Comments made by the pupils:

> "If not we need enough and good equipment for our education."

B. Significantly, the views of the teachers with whom the researcher consulted in the sample schools evidently confirmed their pupils' claims:

> "I agree. Everyone should realise teaching in a dining room is practically a disaster."
>
> "It's worth a try."
>
> "If not teaching in one's specific teaching room – one does not have easy access to the relevant teaching aids."

These comments apart, 58.9% of the sample pupils and 70% of the teachers felt positive to the idea of inclusion of the physical school environment in the field of behaviour management. Only 13.1% of the pupil respondents and 10% of the teachers indicated disagreement. 28.6% of the pupils and 20% that of the teachers remain undecided. This is particularly interesting since it suggests that all these diverse information sources contribute to promoting attitudes towards the physical environment-pupil behaviour research. The subjects feel they must respond and it does postulate a choosing persons who seeks to understand and evaluate him/herself and his situation. Thus, opinions appear (clearly and massively) crystallised very significantly high percentage reflecting towards the side of promoting research interest into the school physical environment approach to behaviour.

The findings for the importance of involving teachers and pupils in decision making on the physical factors such as furniture, academic facilities and evaluation of school premises: Most of the teachers (80%) and pupils (66.9%) (which is a highly remarkable percentage) felt that the situation within school practices may well necessitate more

consideration of their experience. The list of comments made in support of the view appears below:

A. Several of the pupils indicated that they felt very unhappy with the decision-making process and that decisions have often been reached without consulting them:

> "If we had a say in decision-making, then we would be more confident."
>
> "It is the pupils' school too."
>
> "We must be involved in making decisions, because we have good reasons and ideas about what we need."
>
> "Perhaps the head, the deputy and teachers decide. I would like an opportunity to discuss things, we can't air our views."
>
> "It makes the pupils feel a part of the school, which is good."
>
> "It is our school as much as it other people's."
>
> "They are the ones that know – teachers and pupils."
>
> "I agree because it's not just the teachers in the school. There are pupils as well."
>
> "Teachers' and pupils' advice must go there, so they should make the decision."

B. Similarly, comments from the staff indicated that they were less happy with the style of decision-making that pupils had not involvement in decision-making. This was one comment:

> "I strongly agree, as pupils like to take part in decision-making about their life."

However, looking at Table 19 and Table 20 below, a very remarkable percentage of the respondents (11.3% of the sample pupils and 10% of the teachers) indicated this statement concerning teachers'/pupils' involvement in decision-making on the physical school environment elements with strongly disagree or disagree. These opinions seem to have been largely influenced by the fact that schools differ or as one of the sample secondary pupils' stated:

"because no-one does care about our decision."

Perhaps for the same reason, 21.7% of the sample pupils and 10% of the sample teachers remain undecided.

Probably the most interesting aspect of the physical environment of school-pupil behaviour relationships is the importance given to "a smaller teacher-pupil ratio as an essential practice", although one of the sample teachers reported pleasant experiences with large groups:

"It helps marking, but some of the best results come from large classes."

The teacher who gave this statement saw large classes as a means of best academic performance, rather has forgotten spatial issues in behaviour setting (Barker, 1963). Also, in fact, 4.4% of the pupils and 10% of the teachers disagree that a smaller teacher-pupil ratio was an essential thing to think about (some of the respondents remained undecided, quite a large amount – 46% of the sample pupils and 30% of the sample teachers). In the main, nevertheless a very significant number of the pupils' (49.6%), and 60% of the teachers' responses revealed that the large number of pupils can make it difficult for attention and space. Comments given by the respondents who welcome "a smaller teacher-pupil ratio as essential classroom practice" were:

A. Comment made by pupils:

"I strongly agree, so that more time can be spent with pupils."

"I agree because the teacher's attention will come on you more often."

"Pupils would get more attention."

"The teacher can give more time to each pupil."

"Pupils need space."

B. The teachers here welcome the fact that it should be taken up, it is an important thing in helping to maintain close relationships with the pupils:

"What a good idea, regardless of other physical states of school."

"It helps contact with pupils."

In the literature reviewed (for example see chapter six), unpleasant and difficult disruptive behaviour arises in large class situations. Most of the sample secondary pupils and teachers in the present 'moment' analysis felt a similar pattern. Thus, it appears a smaller number of pupils or size of class is deemed to be of the utmost importance in effective behaviour management in secondary schools.

In addition, Figure G has been drawn from Table 19 and Figure H drawn from Table 20, to see the degree of strength of concern associated with each of the items. Data are summarised this way for easy observation. It should also be noted that the diagrams are on separate sheets of paper because they take up a fairly large space.

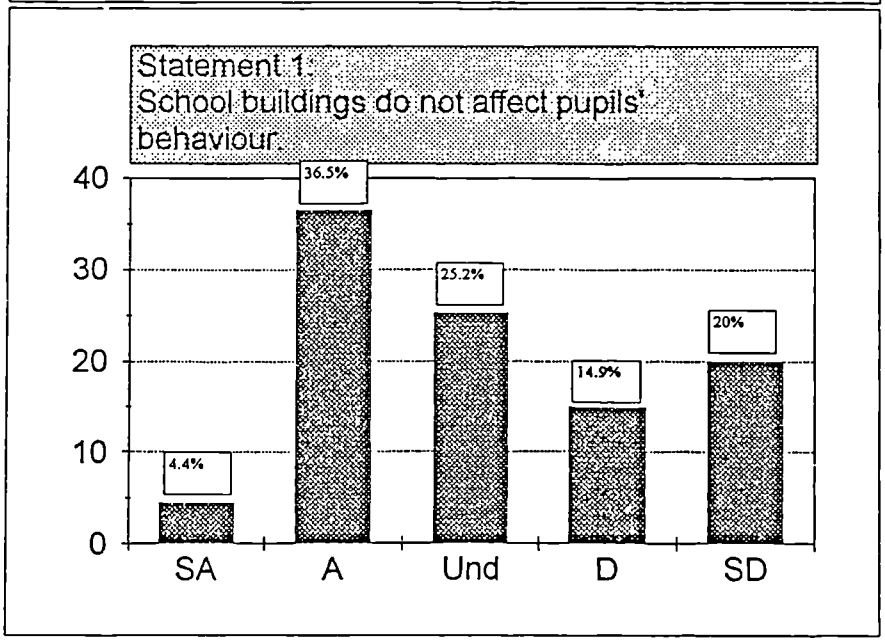
Table 19: The pupils' responses to the question: "Please read each of the following statements. Put one tick in the box which best shows how you feel about the statement" (Number of respondents: 115).

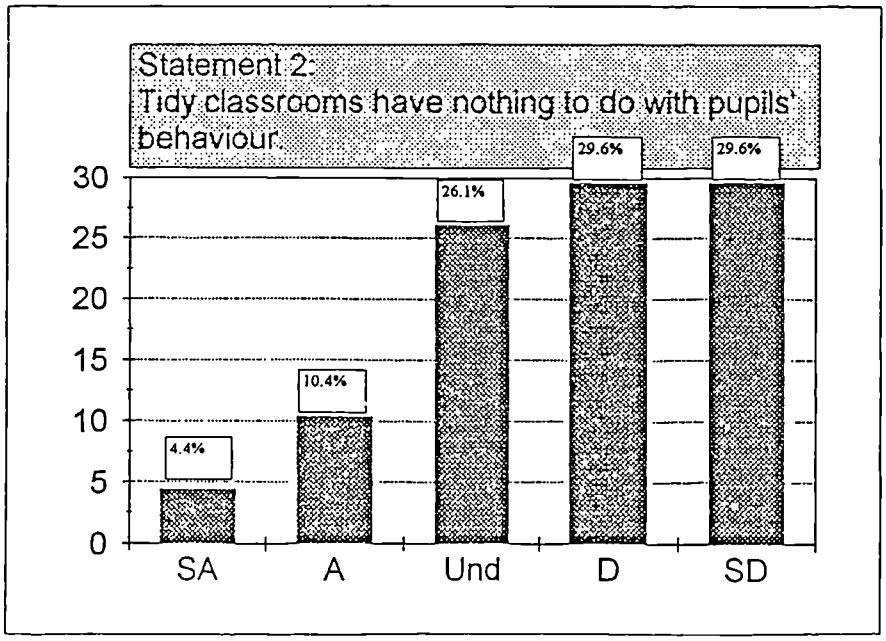
Statement	Strongly agree		Agree		Not sure		Disagree		Strongly disagree	
	%	No.	%	No.	%	No.	%	No.	%	No.
1) School buildings do not affect pupils' behaviour	4.4	5	36.5	42	25.2	28	14.7	17	20	23
2) Tidy classrooms have nothing to do with pupils' behaviour	4.4	5	10.4	12	26.1	30	29.6	34	29.6	34
3) In general, the quality of the physical environment of school cannot affect teacher-pupil relationships	5.2	6	15.7	18	6.7	10	26.9	31	43.5	50
4) The physical environment of school affects the way teachers treat you	20.9	24	21.7	25	32.2	37	20	23	5.2	6
5) The physical environment of school affects the way pupils behave	18.3	21	40.6	46	28.9	33	8.7	10	4.4	5
6) Teachers and pupils must be involved in decision-making on furniture, academic facilities and evaluation of school premises	33	38	33.9	39	21.7	25	9.6	11	1.74	2
7) A smaller teacher-pupil ratio is essential	22.6	26	26.9	31	46	53	3.5	4	0.87	1

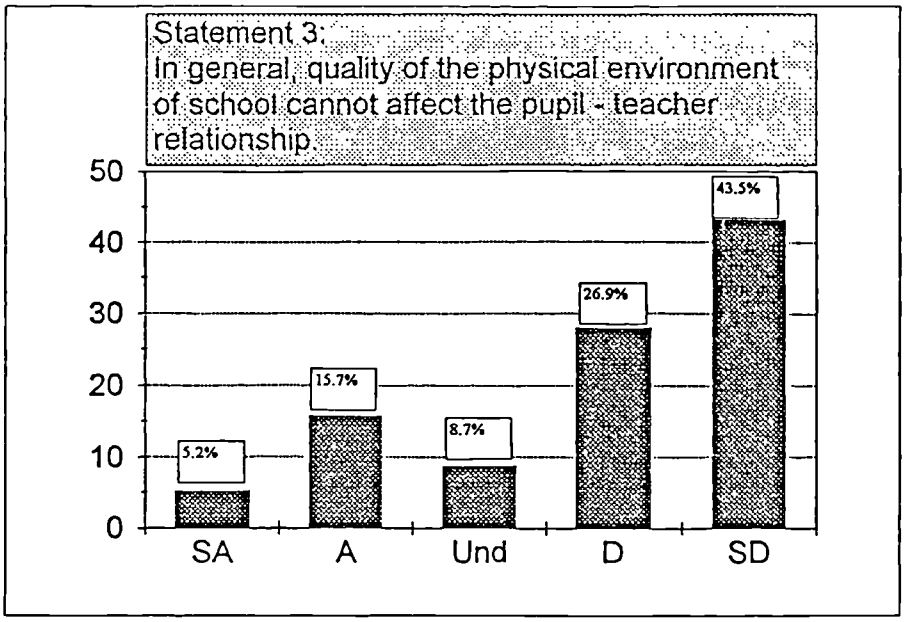
Figure G

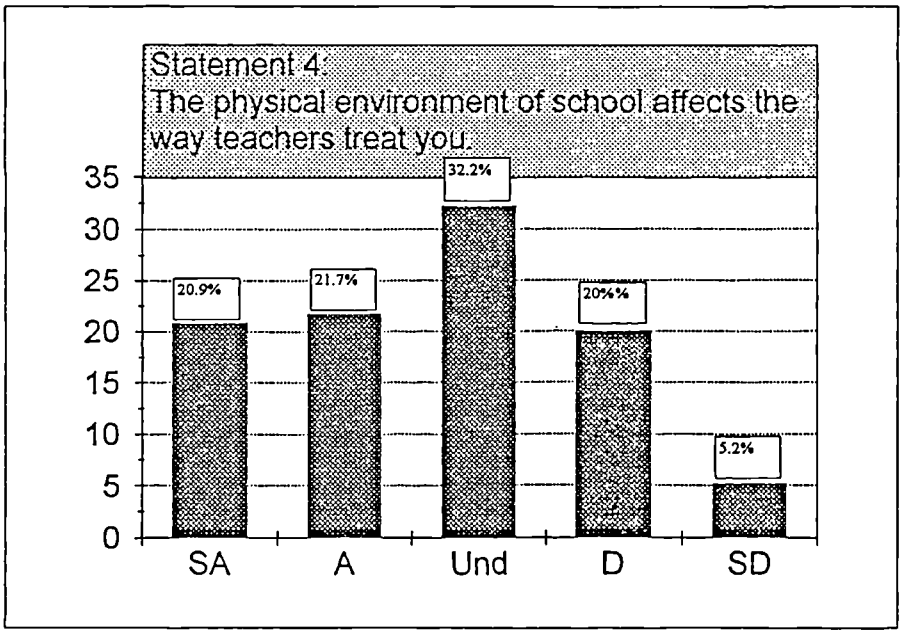
The findings for inclusion of the physical environment of school in field of pupils' behaviour management - pupils' own views. These graphs represent a more summarised form of data from Table 15.

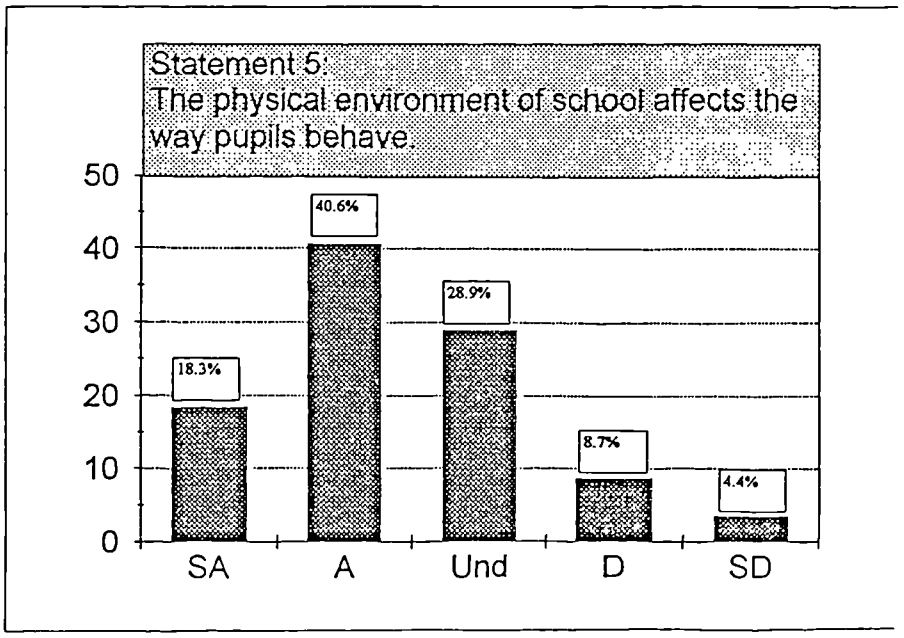
Key:
SA - Strongly Agree
A - Agree
Und - Undecided
D - Disagree
SD - Strongly Disagree

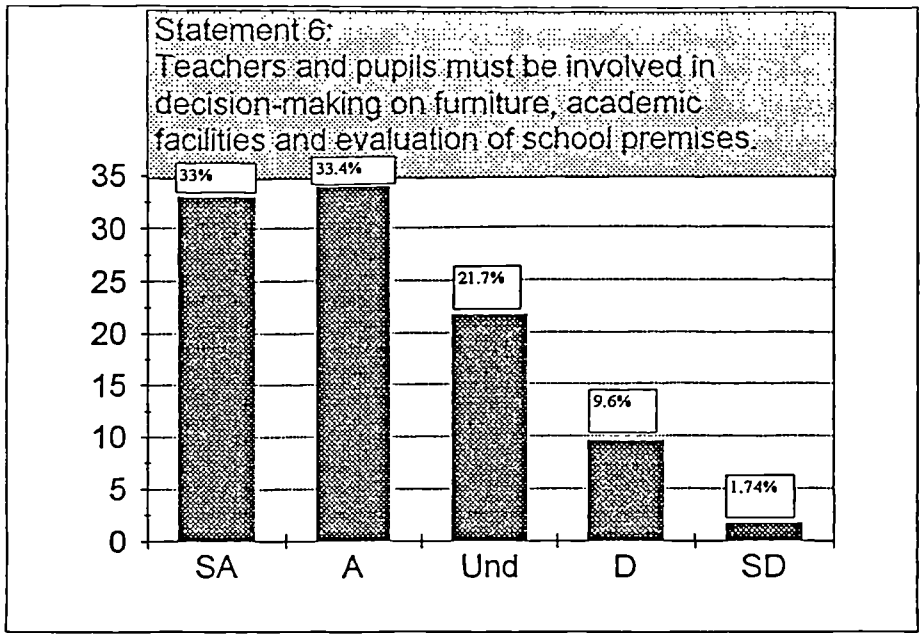





Statement 3:
In general, quality of the physical environment of school cannot affect the pupil - teacher relationship.
50
40
30
20
10
0
5.2%
15.7%
8.7%
26.9%
43.5%
SA
A
Und
D
SD


Statement 4:
The physical environment of school affects the way teachers treat you.
35
30
25
20
15
10
5
0
20.9%
21.7%
32.2%
20%%
5.2%
SA
A
Und
D
SD


Statement 5:
The physical environment of school affects the way pupils behave.
50
40
30
20
10
0
18.3%
40.6%
28.9%
8.7%
4.4%
SA
A
Und
D
SD


Statement 6:
Teachers and pupils must be involved in decision-making on furniture, academic facilities and evaluation of school premises.
35
30
25
20
15
10
5
0
33%
33.4%
21.7%
9.6%
1.74%
SA
A
Und
D
SD

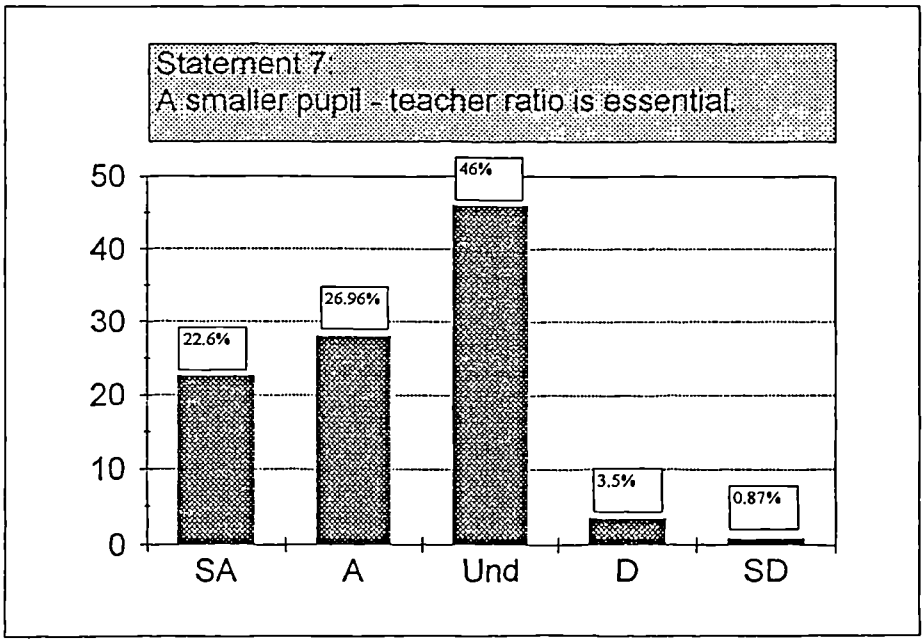

Statement 7:
A smaller pupil - teacher ratio is essential.
50
40
30
20
10
0
22.6%
26.96%
46%
3.5%
0.87%
SA
A
Und
D
SD

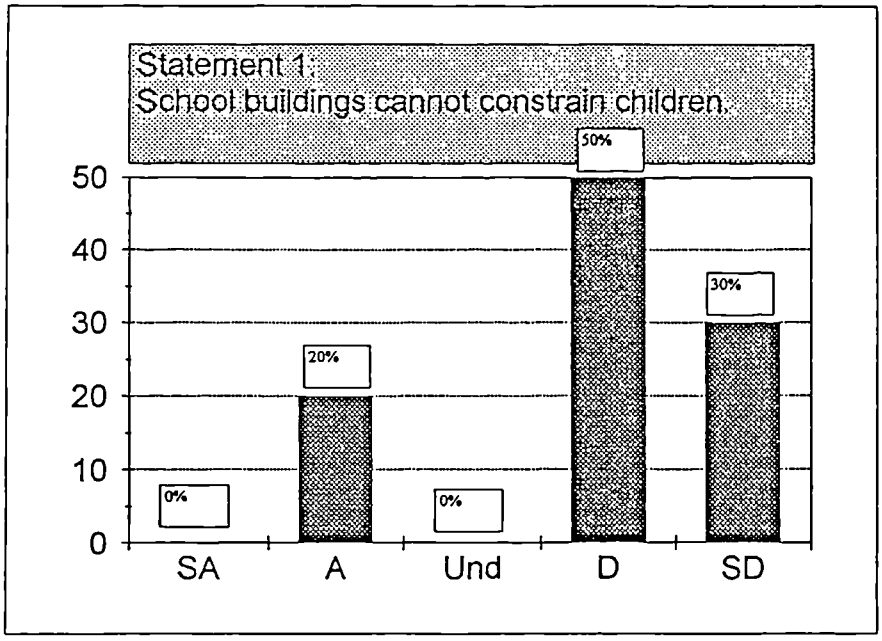
Table 20: The teachers' responses to the question: "Please read each of the following statements. Put one tick in the box which best shows how you feel about the statement" (Number of respondents: 115).

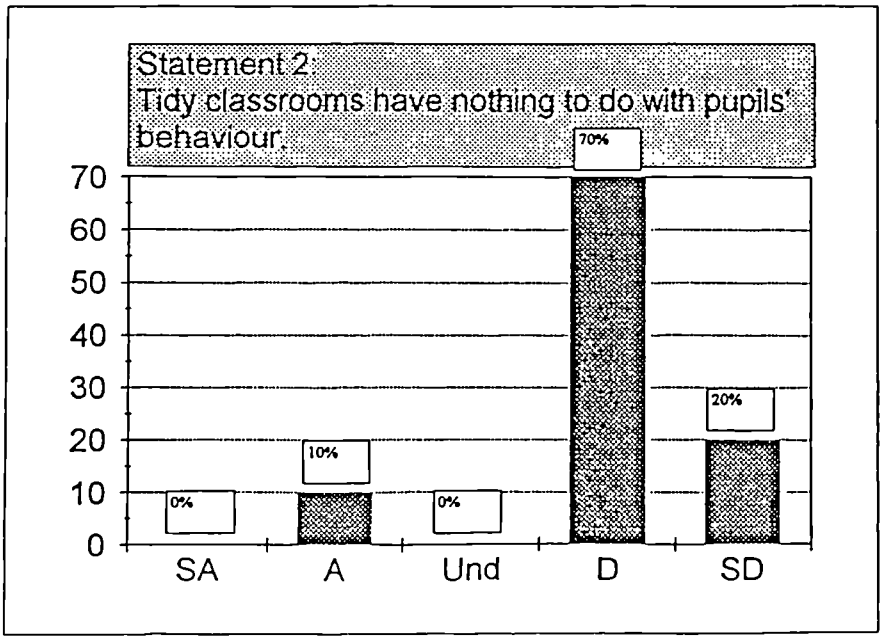
Statement	Strongly agree		Agree		Not sure		Disagree		Strongly disagree	
	%	No.	%	No.	%	No.	%	No.	%	No.
1) School buildings do not affect pupils' behaviour	-	-	20	2	-	-	50	5	30	3
2) Tidy classrooms have nothing to do with pupils' behaviour	-	-	10	1	-	-	70	7	20	2
3) In general, the quality of the physical environment of school cannot affect teacher-pupil relationships	10	1	-	-	20	2	50	5	20	2
4) The physical environment of school affects the way teachers treat you	40	4	20	2	20	2	10	1	10	1
5) The physical environment of school affects the way pupils behave	20	2	50	5	20	2	10	1	-	-
6) Teachers and pupils must be involved in decision-making on furniture, academic facilities and evaluation of school premises	30	3	50	5	10	1	-	-	10	1
7) A smaller teacher-pupil ratio is essential	20	2	40	4	30	3	10	1	-	-
Note: Some of the statements were phrased differently from that of the pupils, but meaning the same thing.										

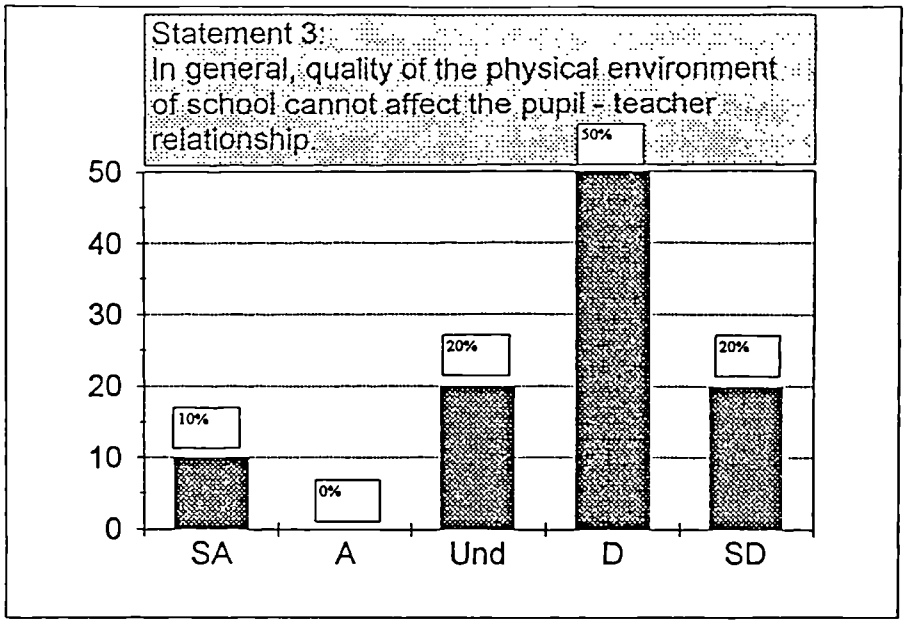
Figure H

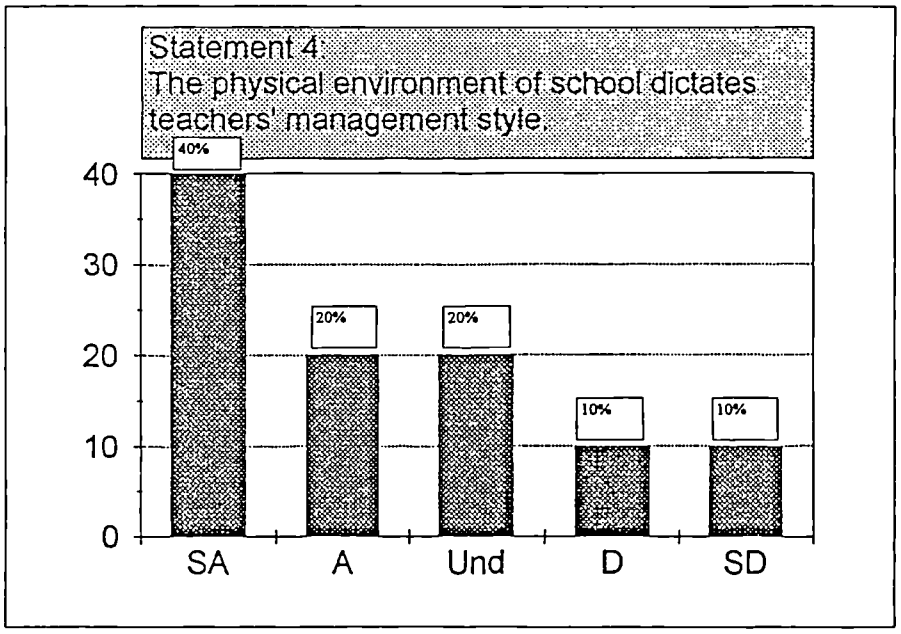
The findings for inclusion of the physical environment of school in field of pupils' behaviour management - teachers' views. These graphs represent a more summarised form of data from Table 20.

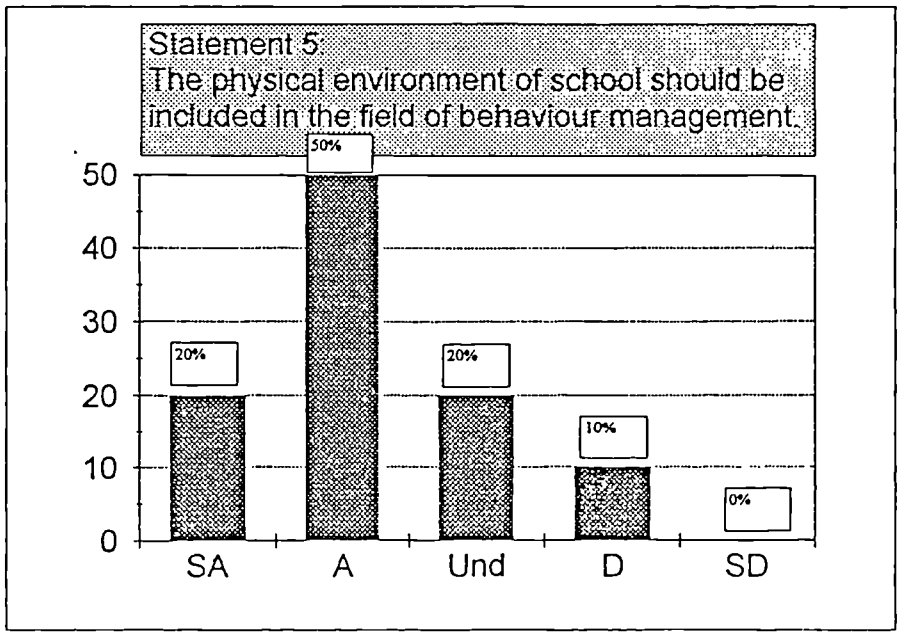
Key:
SA - Strongly Agree
A - Agree
Und - Undecided
D - Disagree
SD - Strongly Disagree

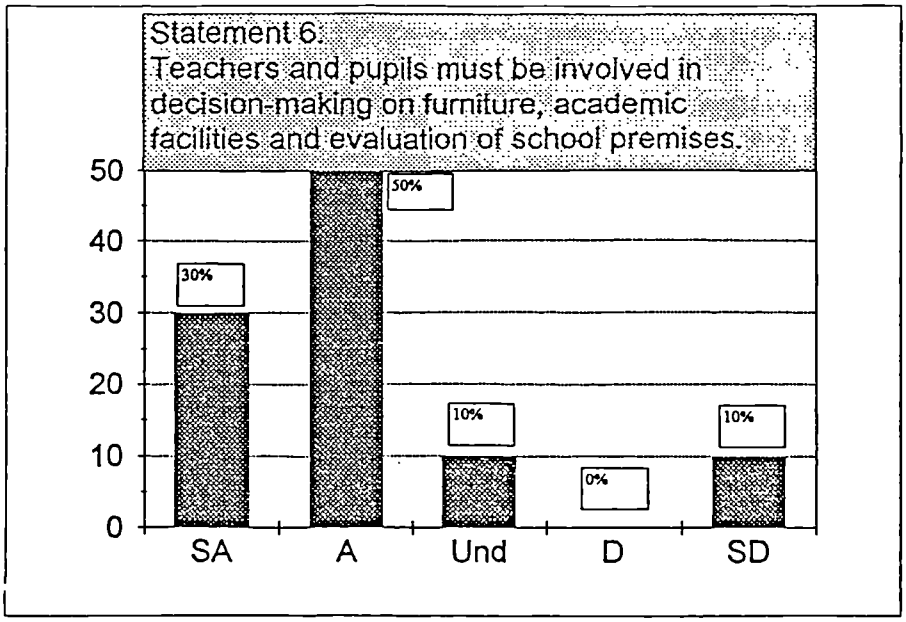


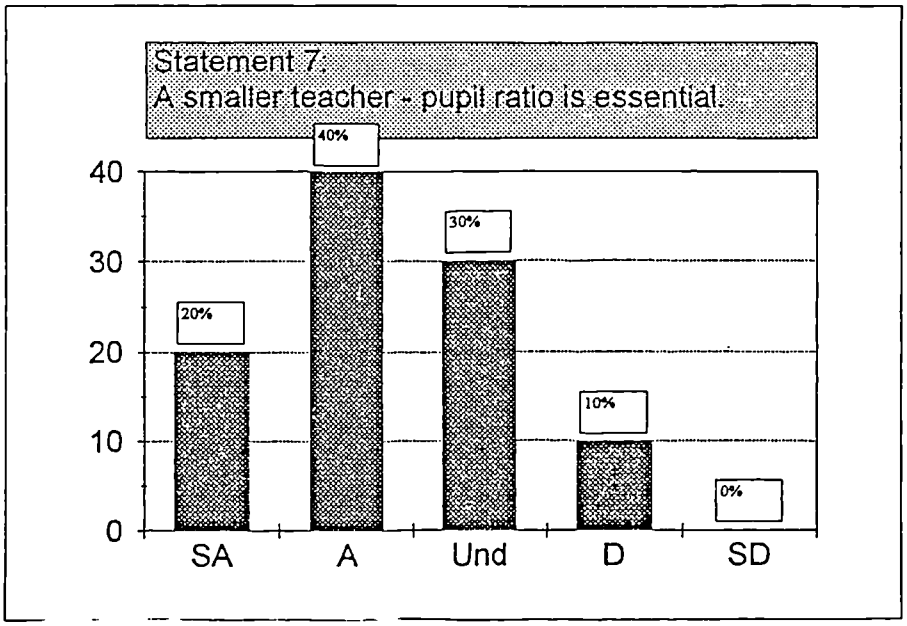



Statement 3:
In general, quality of the physical environment of school cannot affect the pupil - teacher relationship.
50%
20%
20%
10%
0%
50
40
30
20
10
0
SA
A
Und
D
SD


Statement 4:
The physical environment of school dictates teachers' management style.
40%
20%
20%
10%
10%
40
30
20
10
0
SA
A
Und
D
SD


Statement 5:
The physical environment of school should be included in the field of behaviour management.
50%
20%
20%
10%
0%
50
40
30
20
10
0
SA
A
Und
D
SD


Statement 6:
Teachers and pupils must be involved in decision-making on furniture, academic facilities and evaluation of school premises.
50
40
30
20
10
0
30%
50%
10%
0%
10%
SA
A
Und
D
SD


Statement 7:
A smaller teacher - pupil ratio is essential
40
30
20
10
0
20%
40%
30%
10%
0%
SA
A
Und
D
SD

Additional comments made by the subjects

In the study, the respondents were also invited to make additional comments or suggestions about aspects of the physical environment of school and behaviour which they felt was or were overlooked in the questionnaire. The respondents offered the following comments:

1. The notion that environment of a school may contribute to the way the pupils behave was something commented on by one of the sample pupils, who referred to behavioural problems in the school, as in the past, due to unsupportive physical environment of the school:

> "I think if the school buildings are well furnished, carpeted and well heated we here at the school, the pupils will behave better. I am not sure why, but I know we are better behaved now than when the school wasn't nicely furnished."

2. A comment from one of the sample pupils indicated that pupils felt that decisions in the school are taken without consultation with them. Pupils wanted to feel valued and have the opportunity to contribute to decision-making on relevant issues to school life and speak-out about what they were less satisfied with:

> "Have heating on in all cold weather and not just when it's very cold or a visitor is coming into school. A school committee should be created consisting of pupils and teachers so the teachers can hear the pupils' point of view for the school."

(The comment appears also to suggest that teachers get the blame as a result of poor physical school environment provision.)

3. Pupils also comment about their schools being seriously a problem to their health. Also, the notion that conditions of the physical environment of a school may contribute to the way teachers treat pupils was echoed by four of the sample pupils:

> "I don't think it is right for the pupils to pick up the litter!!! 1) It is very unhygienic; 2) We do not get paid for it but other people do; 3) We just shouldn't have to (many agree)."

"I do not agree with the pupils having to pick-up litter because it is very unhygienic."

"We should not be made to do litter duty, especially when we did not put it down. It is a complete waste of time. They should have someone to do it."

"Teachers should treat pupils equally and not misjudge people academically poor for a poor environment."

(These comments appear particularly very challenging, because they also speak about relationships between pupils and teachers, and how pupils can feel about the life their school provides.)

4) Several of the sample pupils were very concerned about their learning needs: The quality of text books role was seen as almost essential to facilitate learning; they felt displays of their work should be made essential; and they comment about sports facilities as a key component of what the school should provide for pupils:

"The standard of humanities books are very poor. There should be a better display on the walls in classrooms. There should be more choice in sports."

5) There was evidence that pupils can be very critical about noise, and high level of noise in school was regarded as a serious problem. A sample pupil who felt in this situation said:

"When we sit GCSE exams, we should be able to do them in a different part of the building, not the Gym, because of the pressure of the pupils' making noises."

6) In some of the sample secondary schools there seemed to be a problem about quality of exercise books. Pupils were unhappy with it and one of the sample pupils in this feeling commented:

"The standard of exercise books is disgraceful."

7) Secondary school teachers' perception of the role played by the physical school settings were clearly (it can be argued) influenced by their view of the school as a workplace, a positive learning environment for pupils, a place established with a

sense of purpose, a place where pupils' should feel happy and enjoy working. This comment comes from one of the sample teachers:

> "*Overall comment:* The more pleasant the physical environment, the better the performance will be. A smartly painted building and warm decorative classrooms help to create a better environment for pupils to work in – for it is a pleasant place to go to. Also I believe it encourages teachers to perform better, as many appreciate the better workplace."

EXTENDED ANALYSIS: PUPILS' LIKE AND DISLIKE FOR THEIR SCHOOL

Before leaving this section of the analysis, as was suggested earlier, it is well to look once more at the question of feelings of the pupils: 1) 'I like the school' and 2) 'I dislike the school'; and it is to the difference between these two sets of pupils' responses I now turn to consider. The reason for doing this is that there might be something influencing these attitudes.

This analysis was based on the questionnaire, although the data were not originally collected for this purpose. It has relevance with the present study in that it has a bearing on the physical factors of school environment that has already been interpreted (see Table 11 above).

The pupils' responses to question number two of the questionnaire (see appendix 5) on likes and dislikes of their school, supplied the base for this more extended analysis. The analysis, then, selected three items or statements from each question – as from question 4 to 7. Most of the items were frequently mentioned during the review of literature (see chapters five and six) and received marginal responses. Also, the items selected constitute both "good" and "poor" conditions, as defined by the HMI Reports (1988-1991). The rationale behind this was to keep track of the process: i.e. to ascertain whether or not these two sets of pupils responded to those items in the same way, through, as they expressed, positive or negative feelings towards their school. Undecided responses were eliminated. The teachers' replies could not be analysed because they did not indicate the

pupils disliking their school (see Table 10 above). However, the pupils' own responses (as it reflects their perception) showed their dislike. The analysis is presented in Tables 21, 22, 23, 24 and 25. Also, diagrams have been drawn to make the analysis clearer: Diagram I from Table 21, J from Table 22, K from Table 23, L from Table 24, and M from Table 25.

The analysis was based on two different numbers, i.e. 47-100% of the pupils who expressed positive feelings and 13-100% who expressed negative feelings. This is because only 50 respondent pupils were able to indicate directly whether or not they like their school.

Each of these tables is discussed in turn. The responses to the items in Table 21 below present a very interesting picture in that it shows the extent to which pupils' feel for or against their school. The percentage of responses from the group liking their school and the group disliking their school, for all three items, were very high in terms of importance in judging whether or not they would like a school. There was a notable percentage of pupils in the positive group who remained undecided in all three items, but none of those in the negative group sector remained so in all three items. On one item, 'quality of furniture', though a high percentage of pupils in the positive set agreed that it was important for them in judging whether or not they would like a school, there was a remarkable percentage who perceived the item to be unimportant. However, respondents in the negative set also associate all three items with no importance, though at a very low percentage. In general, the conclusion to draw from this particular finding is that not all pupils who feel positive towards their school will regard every aspect of the school as important. Similarly, not all pupils who express negative attitudes towards their school will regard every aspect of the school as unimportant. There appears no difference whatsoever between pupils who express positive attitudes and those who express negative attitudes in associating importance/unimportance with school factors.

Table 21: Analysis of responses of those pupils who 'like their school' and those who 'dislike their school' to the question: "In general, when you are judging whether you like a school or not, how important are the following elements?"

Responses	Items											
	Class size				Quality of furniture				Noise level			
	The group liking their school		The group disliking their school		The group liking their school		The group disliking their school		The group liking their school		The group disliking their school	
	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
Important	63.83	30	55.87	7	55.32	26	84.6	11	72.34	34	76.9	10
Not important	17.02	8	46.15	6	27.66	13	15.4	2	2.13	1	23.1	3
No reply	19.15	9	0	0	17.02	8	0	0	25.53	12	0	0
Total	100	47	100	13	100	47	100	13	100	47	100	13

The responses in Table 22, below, on importance level associated with the three items are again very interesting. The pupils who both expressed positive feelings and negative feelings responded very clearly to the question. In other words, there was no undecided response to the items in this question. The information is roughly similar to the description in Table 21 above. In both the groups there were respondents who perceived certain items unimportant. To put it another way, the point which does seem not to appear clear in Table 22 below is that respondents rank the items, but some respondents did not rank certain items which their associates considered important. The explanation to draw upon from this analysis is that what seems important to one pupil may be unimportant to another. In this respect, it may be argued that all aspects of the school environment require, in a sense, an equal treatment. In a way, this would mean equal treatment to every individual pupil. This sort of difference does not seem to mean that the pupils completely agree or disagree with their schools.

Figure I
Summary of data from Table 21

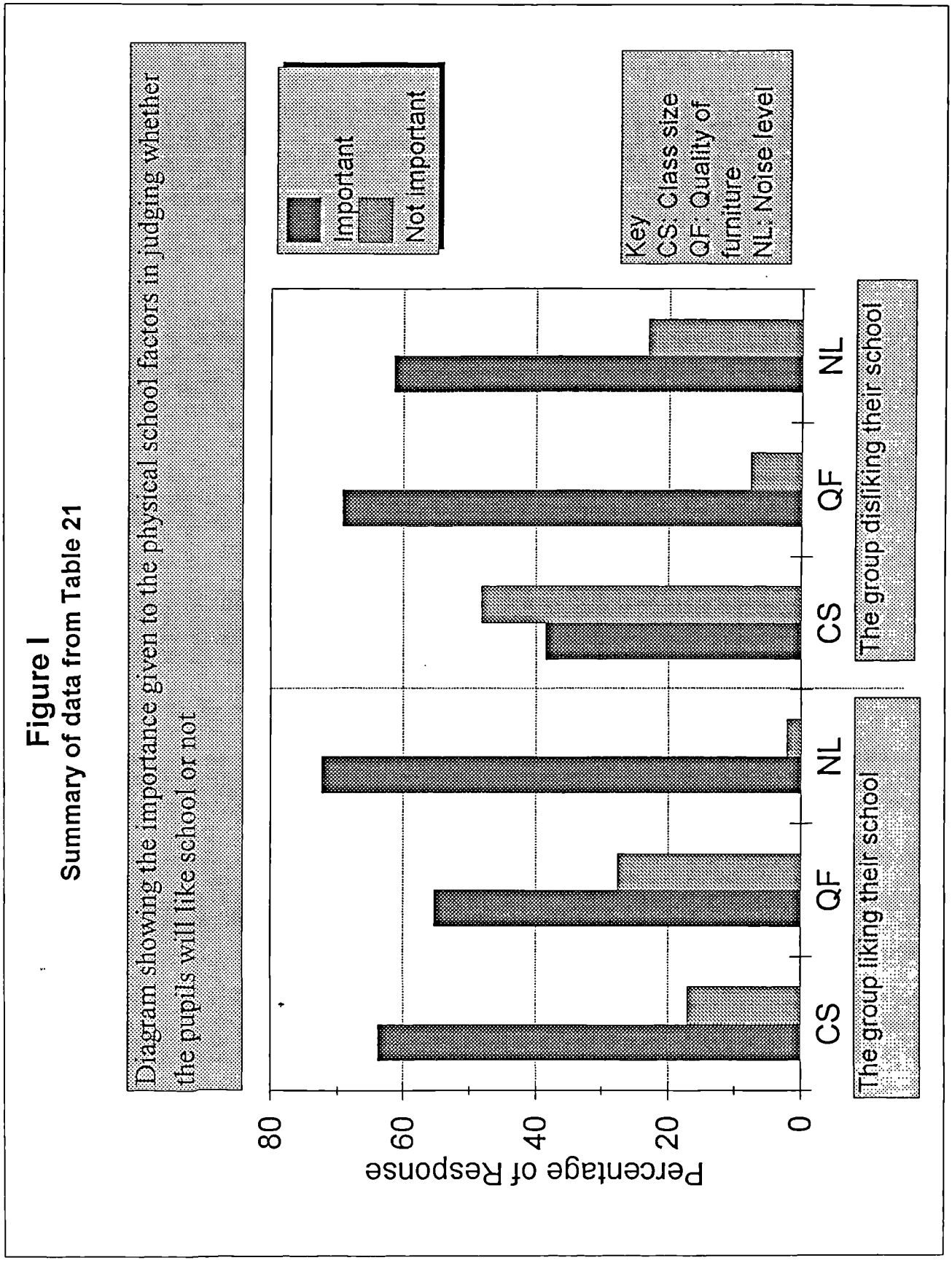


Table 22: Analysis of responses of those pupils who 'like their school' and those who 'dislike their school' to the question: "Below is a list of 10 important aspects of the physical school environment of school. Please write 1, 2 and 3 against the three most important things for you."

Responses	Items											
	Lavatory				Sports facilities				Satisfactory equipment and resources for subjects			
	The group liking their school		The group disliking their school		The group liking their school		The group disliking their school		The group liking their school		The group disliking their school	
	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
Important	53.19	25	46.15	6	40.43	19	61.5	8	63.83	30	46.15	6
Not important	46.81	22	53.85	7	59.57	28	38.5	5	36.17	17	53.85	7
No reply	0	0	0	0	0	0	0	0	0	0	0	0
Total	100	47	100	13	100	47	100	13	100	47	100	13

The evidence reported in Table 23, below, suggest that both pupils who express positive and negative feelings are more likely to be very critical about their school's environment. As can be seen from the fourth item, the pupils in positive set and those in negative set were united in disputing the factor and this was at a considerably high percentage. In the case of the item, 'display' groups (likes and dislikes) agree that it was to their satisfactory. Only a few, but from both groups (likes and dislikes) felt dissatisfied with the item, 'display'; perhaps this may be because their work has not been displayed. On the third item, 'lighting', the percentage of pupils in the negative set was very high; however, the percentage of pupils in the positive set who remained undecided was higher than that of the negative group on this particular item. These findings indicates no difference between the pupils who expressed positive feelings and those who expressed negative feelings, in terms of being critical of their school's environment.

Figure J
Summary of data from Table 22

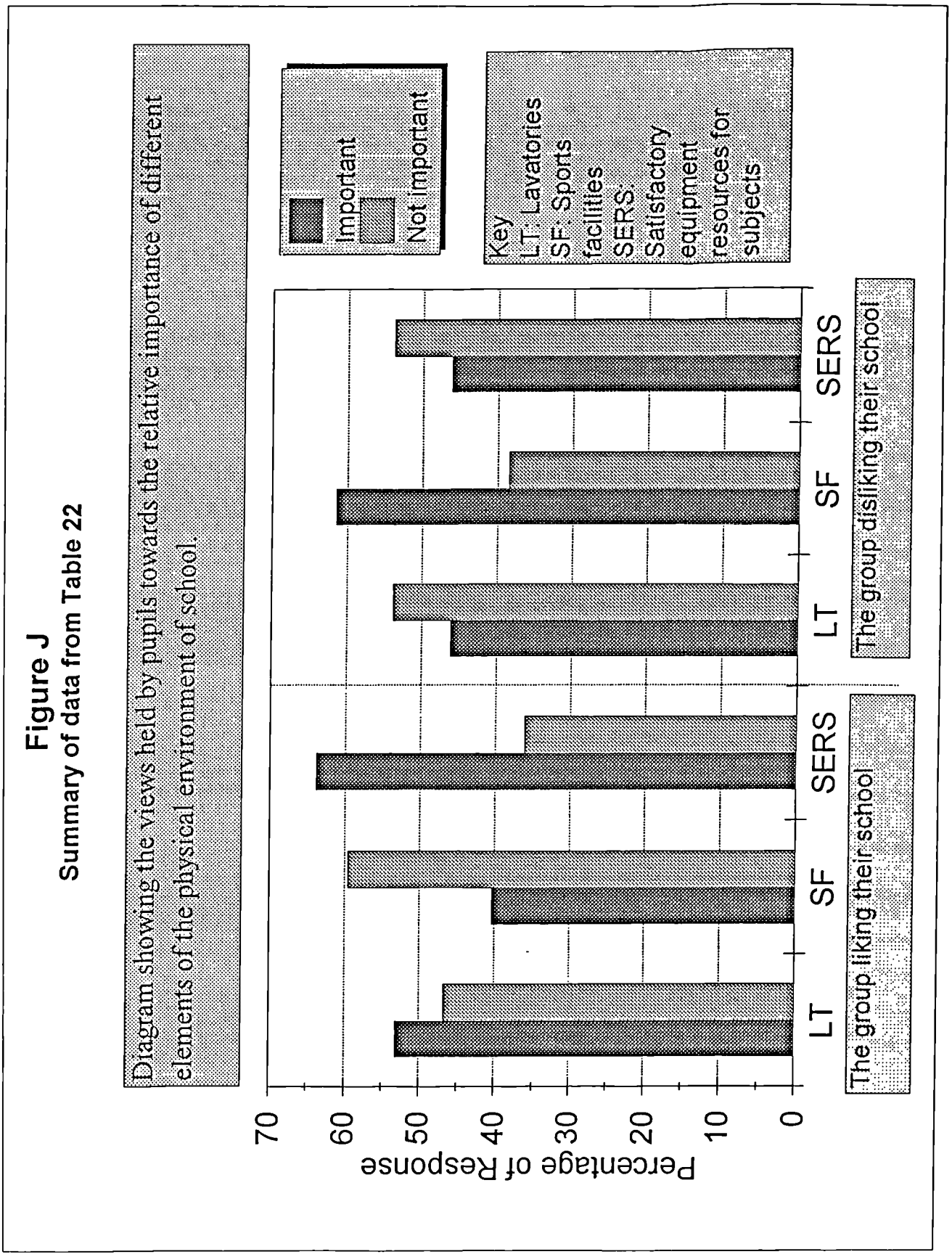


Table 23: Analysis of responses of those pupils who 'like their school' and those who 'dislike their school' to the question: "You know different schools have different conditions of physical environment. In your school, how do you rate the following facilities?"

Responses	Items											
	Display				Heating				Lighting			
	The group liking their school		The group disliking their school		The group liking their school		The group disliking their school		The group liking their school		The group disliking their school	
	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
Satisfactory	72.72	37	61.53	8	61.7	29	46.2	6	82.98	39	46.2	6
Dissatisfactory	4.26	2	15.39	2	19.15	9	38.5	5	4.26	2	38.5	5
No reply	17.02	8	23.08	3	19.15	9	15.3	2	12.76	6	15.3	2
Total	100	47	100	13	100	47	100	13	100	47	100	13

Table 24, below, voiced what the pupils are more likely to do as a result of a "good" physical school environment and what they are more likely to do in absence of the "good" physical school environment. A majority of pupil respondents who expressed positive feelings and those who expressed negative feelings agreed that the presence of the three analysed items would make them behave badly. In both the groups (likes and dislikes), there were some respondents who reported that they would still behave well even if these three items exist. Only a few respondents but also from both the groups (likes and dislikes) remained undecided. In general, in terms of the three analysed items, it can be argued that there is no such thing that the pupils who like their school will have no complaints, those who dislike their school will have many. Most pupils are more likely to complain if the school environment have been poorly managed; and most pupils are more likely to feel positive in a very good aspect of their school's environment.

Figure K
Summary of data from Table 23

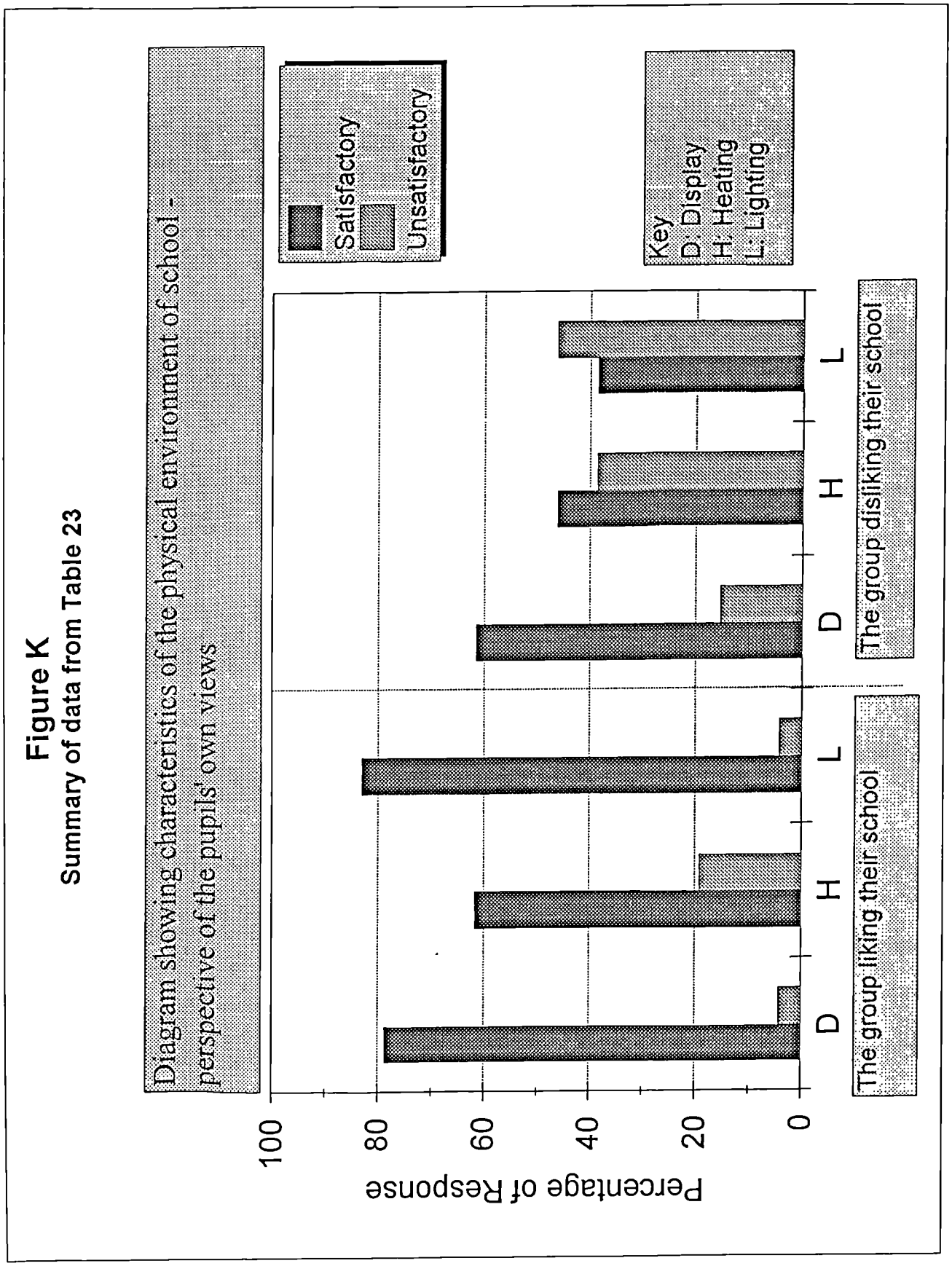


Table 24: Analysis of responses of those pupils who 'like their school' and those who 'dislike their school' to the question: "How do you think each of the following would affect your behaviour if they existed in your school?"

Responses	Items											
	Teaching in the dining hall				The walls full of graffiti				Broken windows			
	The group liking their school		The group disliking their school		The group liking their school		The group disliking their school		The group liking their school		The group disliking their school	
	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
Good	31.92	15	15.39	2	36.17	17	38.6	5	23.4	11	23.08	3
Badly affected	51.06	24	61.53	8	40.43	19	30.7	4	53.2	25	61.53	
Undecided	17.02	8	23.08	3	23.4	11	30.7	4	23.4	11	5.39	2
Total	100	47	100	13	100	47	100	13	100	47	100	13

Again the analysis in Table 25 below shows no clear difference between the pupils who expressed positive feelings and those who expressed negative feelings. The results become, to some degree, complex. Some respondents from both groups (likes/dislikes) remained undecided. Individuals within each group gave a different view or opposite responses: e.g. the item 'school buildings do not affect pupils' behaviour' divided the pupils who expressed positive feelings into two; some agreed with the statement and others disagreed. It was the same outcome of the pupils who expressed negative feelings.

In general as already mentioned, pupils' expressed (likes and dislikes) attitudes appears complex. The questionnaire provides at least some evidence of the stability of the attitudes. But again, the truthfulness of the pupils' reports is clearly not sufficient to rule out completely any of the arguments that have been presented thus far. This analysis has attempted to follow the case in several dimensions. There are, further, the slight but undeniable contradiction to be found following the analysis. Nonetheless, even with those weaknesses, it is safe to conclude that it seems not to be the case that pupils' likes and dislikes are directed to a school as a whole but rather that they have different views about particular things or aspects of the school. And the feelings have got a strong link, it appears, with the physical school environment.

Figure L
Summary of data from Table 24

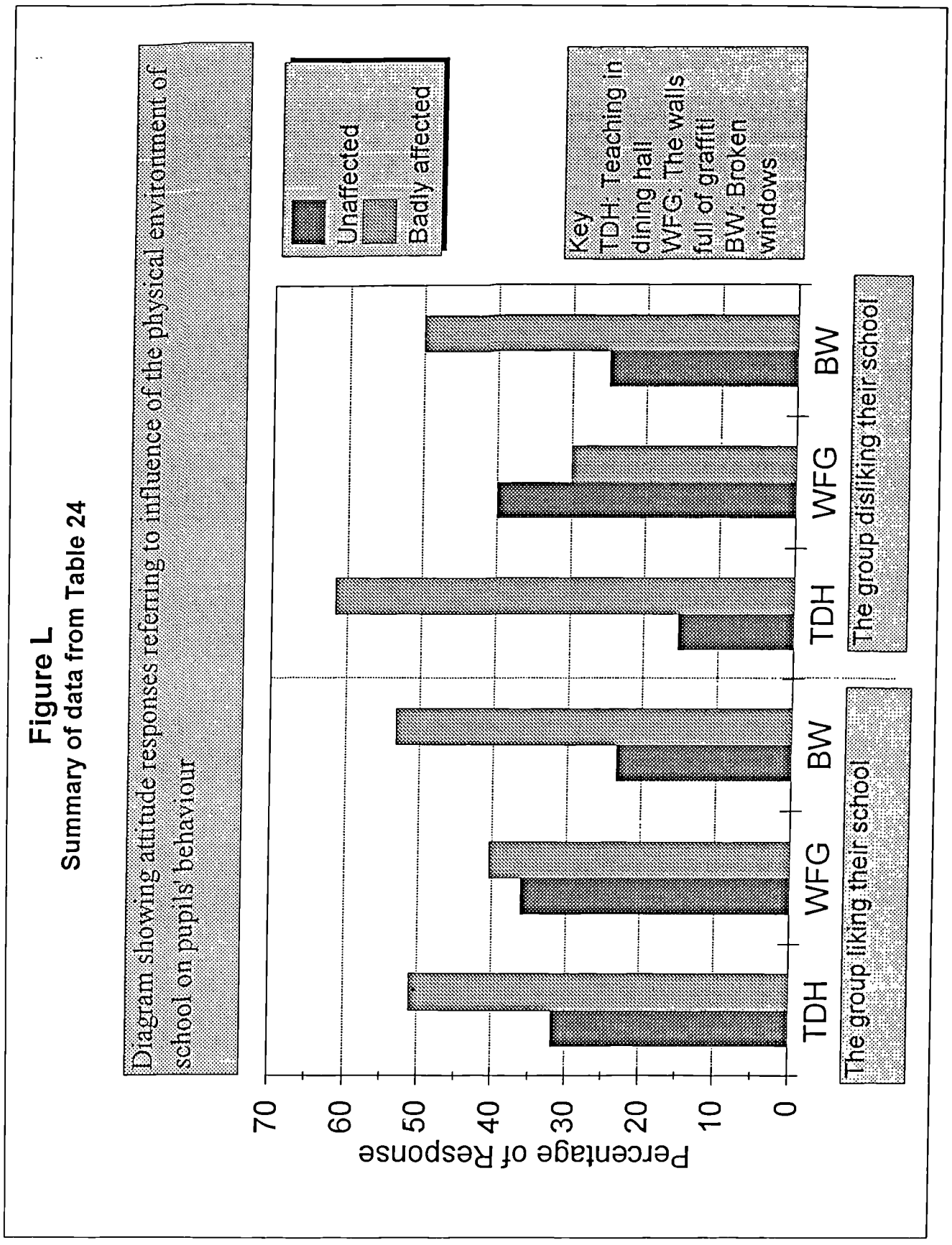
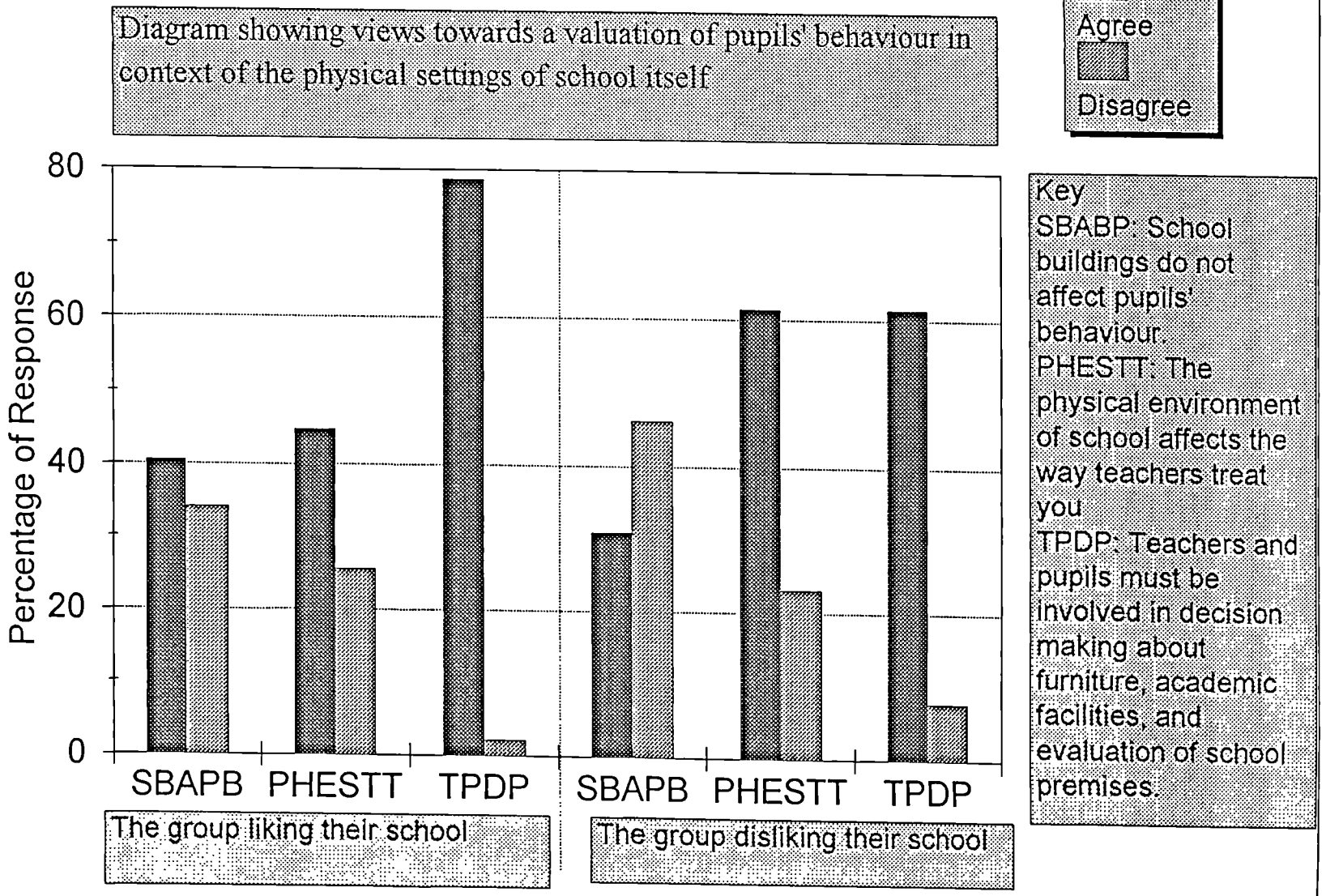


Table 25: Analysis of responses of those pupils who 'like their school' and those who 'dislike their school' to the question: "Please read each of the following statements. Put one tick in the box which best shows how you feel about the statements."

Responses	Items											
	School buildings do not affect pupils' behaviour				The physical environment of school affects the way teachers treat you				The teachers and pupils must be involved in decision making on furniture, academic facilities, and evaluation of school premises			
	The group liking their school		The group disliking their school		The group liking their school		The group disliking their school		The group liking their school		The group disliking their school	
	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.
Agree	40.43	19	30.77	4	44.68	21	61.53	8	78.72	37	61.53	8
Disagree	34.04	16	46.15	6	25.53	12	23.08	3	2.13	1	7.7	1
Undecided	25.53	12	23.08	3	29.79	14	15.39	2	19.15	9	30.77	4
Total	100	47	100	13	100	47	100	13	100	47	100	13

Figure M
Summary of data from Table 25



Comment

This section of the field analysis of the study focused on the perception of the pupils and teachers of the physical school environment – the importance of behavioural interest and recognition for research. The outcome can be summarised as follows:

1. Pupils' feelings, 'like' and 'dislike' of school are very complex, but did not reflect the whole school. It is rather directed to specific elements in a school; and in some respects had strongly been linked with the physical environment of school by the respondents.

2. Both the teachers and pupils spoke about the physical school environment being important, and that it can make a sense of purpose. In this case, comments were made for a 'good' physical school environment – needs to be friendly and caring for all concerned.

3. Both the pupils and teachers were aware of the good and poor conditions of the physical environment of their school, and they were satisfied/dissatisfied with certain factors of it.

4. Data also revealed large differences (e.g. toilet provision, decoration, sports facilities, signposts) between the schools in terms of perceived conditions of their physical settings.

5. There were indications of perception of behaviour (Table 18 and 19 above) related to the conditions of the physical school environment. Many of the responses from the pupils suggest: good 'environment'-good behaviour and bad 'environment'-bad behaviour, and the teachers' responses strongly supported the notion.

6. There were indications that conditions of the physical environment of school may also effect teachers' work/shared behaviour, and in particular the relationship with

pupils. The respondents hold that the good material circumstances support positive relations and poor material circumstances disrupts health of relations.

7. The data provided some explanations for the inaccuracy in perception by the teachers of pupils' lives, and this can be quite dangerous in a concern to build a purposeful environment for pupils to work in.

8. Most of the pupils and teachers appreciated the analysis which value the relationships between the physical school environment and pupils' behaviour; and it may be for this reason that the questionnaire had a good response.

9. In the analysis with reference to behaviour, percentage of responses concerning the importance and behavioural likelihood as a result of the characteristics of the physical environment were high.

However, it is not enough to conclude from these first findings, because the main research question has not yet been fully answered – no clear indication of direct links between the physical environment and behaviour. What seems evident from the above analysis is that perception and attitudes are strongly associated with the physical school environment circumstances. However, this study was designed to search for information concerning links between the physical school environment and behaviour. I now need to look at some theories that relates to attitude-behaviour links.

TEACHERS' ATTITUDE AND BEHAVIOUR ISSUES WITH REGARD TO THE PHYSICAL SCHOOL ENVIRONMENT CHARACTERISTICS

Although involving a very small sample to analyse teachers in Britain, some of the findings described above appeared to point not only to teachers' perception/judgment of the physical school environment circumstances as influential on pupils, but also relating to teachers' own attitudes. It should also be noted that I consider this analysis with the sample of 10 respondent teachers in 2 schools in mind. As shown in Table 16, the sample

teachers gave very critical views about their own satisfaction and dissatisfaction associated with conditions of the physical school environment, meaning that teachers also speak about their schools being happy and relaxed places where they may not feel threatened. Moreover, this is a great pity in that being critical may be a symptom of a problem. As Gross (1992) points out, the central purpose of critical view is awareness – enabling people to take control and direction over their own lives. This is an area which this project has identified that seems also important and ought not to be overlooked. (But, one interesting finding to be recalled at this point is why the sample teachers' responses were in favour of pupils' liking for their school – in spite of this critical picture of opinion? Perhaps teachers are not fully aware of pupils' feelings, as suggested by the data – see Table 10 below.)

Again, it was notable that the percentage of teachers responding to the statement that "the physical environment of school dictates teachers' management style" (was high 60%). This indicates that a majority of them are aware of the powerful pressure that their school's physical setting may have on their perceived influence on their behavioural relations with pupils. This can be argued, the behaviour will be friendly where the settings are altogether supportive and in some ways uncaring where the environmental features are horrible. For example, as mentioned earlier, there were expressions of concern among the sample pupils about why they had to pick up litter which they did not throw! This item indicates that it may have been the 'widespread litter environment' which disturbed the teachers' behaviour to treat their pupils as shown above.

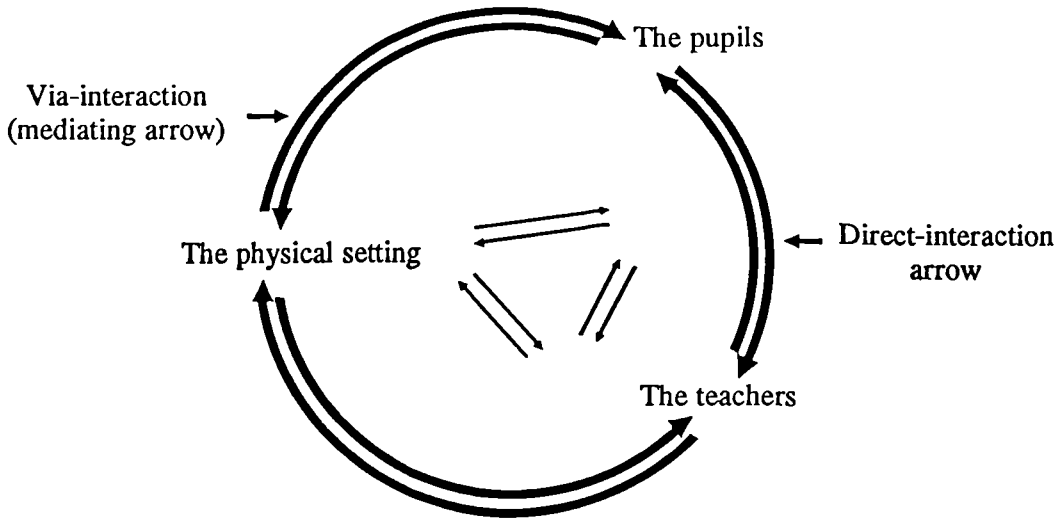
The other area that provided perception on the influence of the physical environment of the school on teachers' judgment was the statement: "Teachers and pupils must be involved in decision making on furniture, academic facilities, and evaluation of school premises". A majority of the sample teachers (80%) and pupils agree with the statement (see Table 20). Again, this indicates that the teachers felt not only more critical of how decisions on physical features of their school have been made, but also they felt very

unhappy with the features or conditions already in their school. And, in fact, it also indicates that the teachers regarded the physical setting conditions of a school as very important. As quoted earlier one of the sample teachers saw the quality of the physical school environment as a significant factor that with very good physical setting conditions, well planned and organised, teachers will have a very good attitude and behaviour in the work place and work well. I quote the comment again for being relevant to this extended analysis:

> "Overall comment: The more pleasant the physical environment the better the performance will be. A smartly painted building and warm decorative classrooms help to create a better environment for pupils to work in – for it's a pleasant place to go to. Also, I believe it encourages teachers to perform better, as many appreciate the better workplace."

The last statement of the quotation clearly suggests that teachers' work behaviour can be improved through improving the physical conditions of the school – as a workplace for teachers. The teachers' responses presented in Table 20 appears also to support this view.

In general, the environment of school is often understood to relate to pupils' outcomes (see, for example, Lawrence et al, 1984; Elton Report, 1989). But the present findings suggest that the physical school environment also has an effect upon the secondary school teachers. A majority of the sample teachers felt they can work and behave very well in a school with a very good physical setting; and that they can be quite difficult or unhappy in a situation where they feel threatened. So, this suggests that a very good atmosphere of a school should care for all concerned: that is, both pupils and teachers (see Table 17 and 20 above). In terms of the present findings, the 'interact-operation' is focused in the diagram as below (pupils-teachers interact directly or indirectly via the material environment, and both pupils and teachers have direct conduct with the material environment):



Note:

- This finding clearly reflects the view expressed in chapter 2 of this study about components of a whole school approach to behaviour.
- The diagram relates to connections found by this study between the physical school environment, the pupils and teachers. It may be perceptive, attitudinal or behavioural.
- I call this interactive operation a "two way traffic-cycle" because these three elements are not only important individually but are interrelated and mainly operate as a team. Data indicate that these elements relate to each other.
- The arrows show directions of operation. The arrows also show the direct and via (indirect) links between the elements.

It should be noted here that this model reflects something specific about hypothetical proposition 2 of this study: 'that under a condition of school as a behavioural setting there is a connection between the physical environment of school and pupils' attitude/behaviour.' The model illustrates not only that factors within the school environment interacts, but also indicates the structure of the interaction. Again, the indication of the interaction is complex; involving human components, and how the human components interact with the physical aspects of the school environment. The model shows that teachers, pupils and the physical aspects of the school environment are closely related. We can expect that under this form of organisation of school interaction,

the physical features there will contribute to the types of behaviour by pupils (see also Figure A1 in Chapter 3 of this study).

Development of the study and the difficulties experienced

Before proceeding to the second study, mention must be made of the limitations of the first study and certain experiences of difficulties soon after presentation of the data.

The fault of the first study (questionnaire study) is that it has not answered the research question, rather it provides information on the link between pupil/teacher attitudes and the physical school environment. This is, perhaps, because the researcher did not ask the correct questions of obtaining direct information about the link to between the physical school environment and pupils' behaviour. Therefore, might the physical school environment be linked to pupils' behaviour through attitudes?

The most appropriate way of doing this could have been to devise a new questionnaire and repeat the study in the same two schools. This proved impossible for the following reasons:

- The school could not give me another go, as the school times are controlled.
- The researcher did not inform the two schools in advance that it would be a repeated study. In other words, the headteachers of the secondary schools were not made aware of the second questionnaire study.
- It was thought not to repeat the study in the same schools because it would be disruptive, yet again, the normal programme or activities of the school.
- The researcher had serious financial difficulties and in this case could not afford expenses of repeated questionnaire study (expenses such as typing, photocopying, mailing).

With these experiences in mind, the reader will see that study 2 is deeply involved in debate on attitude-behaviour; and a field study carried out in a different school – using different methods of data collection. A particular need here is to 'build' on what has been discovered and try to answer the main research question.

STUDY TWO

ATTITUDE-BEHAVIOUR RELATIONS

Why consider attitudes at this stage of the thesis?

The starting point of this thesis was a notion that prime facie the physical environment of school-pupil behaviour link exists. The questionnaire survey was carried out in the two secondary schools as an attempt to explore teachers' and pupils' perceptions of this notion, but the results failed, rather it yielded the school physical environment-attitude links. In this section of the study I will investigate attitude; and specifically the question: under what conditions do attitudes emerge as behaviour? The actual elements of the physical environment of the school measured are the same as of the study 1. This second study explores links between attitude-behaviour-the school physical environment links, as a whole. In the study, I will consider the questionnaire I used in study 1, as well as the inferential limitations also of study 1 in the light of their implications for attitude components.

Procedure: Following from the first study, I will first consider definition of attitude and then consider relevant theories of attitude psychology. I will also review relevant empirical studies available on attitude-behaviour consistency. Details of the methodology of the empirical analysis are discussed in chapter 8; only some highlighting are given within this section.

WHAT ARE ATTITUDES?

Human attitude has been defined in a number of different ways of the years. Allport (1935) cites some 16 definitions of attitude (list of the definitions apparent in Thomas, 1971, pp.17-18) that were formulated prior to the preparation of his manuscript. He attempted to glean from the various definitions the common element or what he referred to as the essential features of attitude. He arrived at three such features: a) preparation or readiness for favourable or unfavourable responses, b) which is organised through

experience, and c) which is activated in the presence of all objects and situations with which the attitude is related.

Fishbein and Ajzen (1975) also identify three essential features of attitude: i) "attitude is learned orientation"; .... ii) it predisposes action; and iii) such actions are consistently favourable or unfavourable towards the object. There appears a certain degree of agreement among psychologists as to the nature of attitude (Krahe, 1992).

However, as Anderson (1981) argues, the 'clear' definition of attitude ought to take account of attitude links with other elements. This notion may be useful for understanding more about attitudes and how they influence behaviour. Anderson (1981) delineated essential features of affective characteristics in general. He identified five such characteristics: a) emotion, b) consistency, c) target, d) direction, and e) intensity. Each of these features will be described briefly below. The definitions by Allport (1935) and Fishbein and Ajzen (1975) will be involved in the discussion and this study considered:

a) **Emotion**: Affective characteristics typically are contrasted with cognitive characteristics (primarily, knowing and thinking) and psychomotor characteristics (primarily, action and behaviour) since an attitude is an affective characteristic it also involves a person's feelings and emotions. Quite likely, then, the preparedness or readiness mentioned by Allport is emotional (in contrast with intellectual or behavioural preparedness or readiness). In fact, Chave (1928) had to define attitude as a complex of feelings, desires, fears, convictions, prejudices, or other tendencies that have given a set of varied experiences. In Chave's definition feelings are directly mentioned: desires, fears, convictions, and prejudices are quite clearly emotions.

b) **Consistency**: Anderson theorises that consistency differentiates affective characteristics from affective reactions induced by particular situations or settings. A reasonable degree of consistency of responses are necessary before it can be

inferred that a person possesses a particular affective characteristic. If there is consistency of responses, then the person does not possess the particular affective characteristic being sought. Rather the responses are determined more by factors external to the person than factors internal to the person (i.e. characteristics of the person). (For example, if pupils leave school situations with the same levels or characteristics with which they entered in the school, then the responses are determined by internal factors. If the pupils leave school situations with different characteristics altogether, or some changes of affective characteristics about, it is likely that their experience in classrooms, schools or both have resulted in some changes in their character.) Both Allport, and Fishbein and Ajzen cite consistency as an essential feature of attitudes (it is here that element of agreement is apparent). While Fishbein and Ajzen explicitly mention consistency ("such actions are consistently favourable or unfavourable"); Allport implies consistency in his third essential feature. If preparedness or readiness is activated in the presence of all related objects and situations, consistency of activation is clearly implied.

c) **Target**: As is indicated in Allport's essential feature and in the above discussion, affective characteristics are related to objects, situations, ideas, experiences can be subsumed under the general label "target". All emotions and feelings including attitude, are directed toward (or away from) some target. While Allport identifies these targets as objects and situations; Fishbein and Ajzen limit the targets to objects.

d) **Direction**: Given a target, affective characteristics prepare people to approach or avoid it. Hence direction (or in Allport's terms "characteristics") is an essential feature of affective characteristics. Direction (as will be returned to later) is concerned with the positive and negative orientation of the emotions or feelings towards the target. Differences in orientation are typically expressed in terms of

bi-polar adjective which indicate the opposite directions. Both Allport, and Fishbein and Ajzen suggest the appropriate bipolar adjective for attitude are favourable and unfavourable.

e) **Intensity**: Intensity refers to the degree or strength of the emotions or feelings. Intensity is an essential feature of affective characteristics; some people experience more intense emotions than other emotions. "Hate" for example, is a more intense emotion than "dislike". Intensity per se is not addressed in the definitions of Allport, or Fishbein and Ajzen. It seems likely, however, that intensity is related to the level of preparedness (Allport) and the extent to which attitude predisposes action (Fishbein and Ajzen).

As has been mentioned, Anderson (1981) identified his five essential features so that attitude could be differentiated from other affective characteristics (such as interest, value, preference, self-esteem, locus of control, or anxiety). Interestingly enough, the first two features (emotion and consistency) do not permit such differentiation. Rather, all affective characteristics possess these two features (i.e. humans are feeling beings, as well as thinking beings, and at the same time have a sense of typical ways of feelings). Likewise, that attitude is learned (Fishbein and Ajzen) or organised through experience (Allport) does not allow the differentiation of attitude from other affective characteristics.

The differentiation of attitude from other affective characteristics is possible only if the last three essential characteristics identified by Anderson are considered – target, direction, and intensity – because they are fairly clear indicators.

As has been indicated above, the most common target of attitude is an object; frequently a social object. In contrast, the most common target of interest is an activity. That is, people develop an interest in doing things. The most common target of value is an idea or abstraction. As will be noted, Rokeach (1973) refers to a value as a standard. Unlike the targets of attitude which are fairly concrete, the targets of values are largely abstract.

Consider the "study of value" for example. If this instrument is designed to measure six value types: aesthetic, economic, political, religious, social and theoretical. As can be seen, these types are clearly abstract in nature.

The preference aspect of affective characteristics is a tendency to choose one object, activity or idea, as opposed to another object, activity or idea (Getzels, 1966). The measurement of preference requires the specification of two or more targets since preferences involve a choice to be made between or among alternatives. On the Kuder Preference Record, Vocational for example, students are presented with three alternative activities. The targets of the preferences measured by the KPR-V correspond with 10 vocational areas including outdoor, mechanical, artistic, and literary (Allport, et al, 1951). As a consequence, for example, the direction of preferences can best be thought of as relative in nature – more, less, better, or worse. It should be noted that preferences may involve attitudes (e.g., "more favourable"), interests (e.g. "less interest in x than y"), or values (e.g., "more valuable than"). In fact, preferences aid in the formation of one's priorities among attitudes, interests and values.

As can be seen, then, attitude differs from affective characteristics in terms of target. While targets of any other related affective characteristics include activities and obstructions, the targets of attitude are most likely fairly concrete, social objects.

Attitude also can be differentiated from other affective characteristics in terms of direction. As has been noted, the directional indicator of attitude are favourable and unfavourable. Other affective characteristics are associated with other directional indicators. Several directional indicators are appropriate for defining value depending on the definition being used: undesirable and desirable, unimportant and important, and unacceptable and acceptable.

The directional indications for preference are in fact the targets themselves. That is, the directions indicated by preferences are towards one target and by definition away from another target. This approach was actually addressed in the above analysis. In some cases, respondents were asking to indicate what they felt was important, and in some to

indicate what they felt was most important. Anyway, this point will be discussed again later.

Finally, attitude can be differentiated from other affective characteristics in terms of intensity, from which definition of attitude it can be inferred that attitude is more or less a reactive emotion. That is, when an object is encountered by an individual, attitude is activated, several affective characteristics are more intense than attitude.

Interest is a more intense emotion. According to Husen and Prostlethwaite (1985) an interest "impels an individual to seek out particular objects, activities, understandings, skills, or goals for attention or acquisition" (emphasis added). Interest impels a person to action; either covert action (attention) or overt action (acquisition).

Similarly, value is a more intense emotion than attitude, and it has to be noted that value can be seen as emotion because it has an excited state of feelings. Each of the definitions referred to earlier include words and phrases that indicate quite clearly the high intensity nature of value. That is, for example, what is important or cherished, and what standards of conduct or existence are socially acceptable. Rokeach (1973) defines a value as a standard that guides and determines action, attitudes toward objects and situations, ideology, presentations of self to others, evaluations, judgments, justifications, comparisons of self with others, and attempts to influence others. That a value "guides and determines" suggests that it is a highly intense emotion. Tyler (973) indicates that the educational significance of value stems from its role in "directing .... interests, attitudes, and satisfactions". The inclusion of the verb "direction" again suggests a fairly high intensity level. That is, the possible direction of value would be "wrong or right", unimportant or important, or unacceptable or acceptable.

Finally, preference tends to be a fairly low intensity between or among targets. Since the choice is "forced" on the individual,a great deal of emotion may not accompany the choice.

There is also the issue of a distinction between attitudes and beliefs. According to Fishbein (1967) beliefs are neutral in effect but, as clearly noted above, attitude expresses a

person's favourability toward an object. In other words, beliefs represent the knowledge or information we have about the world (although they may be inaccurate or incomplete) and, in themselves, are non-evaluative. According to Fishbein and Ajzen (1975), a belief into attitude (belief associated with attitude), a 'value' ingredient is needed which, by definition (as above) is to do with an individual's sense of what is desirable, good. valuable or worthwhile. Put it this way, beliefs have an 'is-ness' about them (i.e. a belief that something is so – note the phrase *is*), values have an 'oughtness' about them (i.e. a belief in something). Beliefs are, in themselves, neutral whereas values, by definition, are not: they provide standards and motives which guide actions towards the achievement of those values.

From the above review, then, attitude can be considered a moderately intense emotion that prepares or predisposes an individual to respond to a particular object. This definition contains all five of the essential features of Anderson's (1981) definition, which is consistent with the composed definitions offered by Allport (1935) and Fishbein and Ajzen (1975). This will be used as a framework for the next stage of this study.

CONSISTENCY BETWEEN ATTITUDE AND BEHAVIOUR

The purpose of this section of the chapter is to describe some theories of the relationship between human attitudes and behaviour, a topic known as well "attitude-behaviour consistency" (Pennington, 1986; Hewstone, Stroebe, Codol and Stephenson, 1993), referring to an assumption that attitudes lead to behaviour. In other words, the general idea here is that people's actions (behaviour) are assumed to have links with their attitudeS. For many years social psychologists have theorised about this attitude-behaviour consistency. Two of the oldest, widely referenced or best known, and which seem particularly relevant to the present study, are Heider's (1944, 1958) balance theory and Festinger's (1957) cognitive dissonance theory, which I shall now examine briefly.

Heider's Balance Theory

Heider (1944, 1958) was perhaps the first social psychologist to propose a theoretical model which links attitude with behaviour. The model is concerned primarily with situations involving two persons and an attitude object. According to Heider's balance theory, people's attitudes tend towards a state of balance or consistency: we tend to like people who agree with us, to associate positive properties with objects or people we value and to attribute negative motives to people we despise, to help people we admire (Heider, 1958: pp.200-209). Note the difference between the two words "help" and "admire". The former ("help") refers to action (behaviour) – assumed as an outcome of the later expression ("admire") which refers to favourable attitude. In terms of the present analysis, this seems to suggest that the pupils who expressed positive feelings towards their school or certain factors of the physical school environment will respect the school/factors, while to those objects or situations which they dislike – they will react to it very badly. Balance theory also predicts that: in a balanced configurative (sociophysical) things fit together harmoniously; there is no stress to bring about change. However, when the configuration is unbalanced (e.g. a person we like commits a crime), tension is created which gives rise to action or reorganisation designed to bring about a balanced state of affairs. That is, that instability in valued factors lead to possibilities of action (behaviour). To illustrate this in the present analysis, it seems to reveal that when the items such as toilets, material resources for subjects, furniture fittings which the pupils considered to be the most important when either are missing or are in poor conditions that will create tension (pressure) in them to react quickly and unfavourably. Another connection between Heider's theory and the present research is that, although he was primarily interested in perception of the ordinary person who strives to interact with his or her fellows, Heider applies the principles of the physical object perception to perception of human interaction. In this respect, a connection can be seen between the writings of the social psychologists and an understanding of human responses to the

physical environment, like social. Others (just as discussed in chapter three of this study), can exert a strong influence on attitude, and can be researched on the assumption of attitude-behaviour relationships. While Heider's formulation is intuitive and qualitative, containing no basis for predicting, particularly the route by which balance would be obtained. Moreover, Heider did not consider systems that have more than three elements. Larger structures can be partially balanced and imbalanced, but this feature is not handled by the systems in its simple form.

The Theory of Cognitive Dissonance

Basing his ideas largely on Heider's balance theory, Festinger (1957), in his theory of cognitive dissonance, retained the notion that discrepancies or inconsistencies cause uncomfortable tension that people try to reduce or eliminate, but he assumed the discrepancy itself to exist entirely within the individual's own cognitive system. While groups and social norms might still play a role in creating discrepancies, dissonance could be a non-social phenomenon. For example, a person who smokes has the cognition, "I am a smoker". Information about the negative consequences of smoking produces a second cognition ("smoking is related to lung cancer) that is inconsistent or dissonant with the cognition that the person smokes. If smoking causes lung cancer, why smoke? One cognition does not psychologically follow from the other (in other words, one cognition is dissonant with the other); it is hard to believe them at the same time. Cognitions or cognitive elements (see Ajzen, 1988:p.27) are bits of knowledge ("it is raining" or "it is a good school in terms of sport"), opinions ("I like the rain" or "I like sports"), or beliefs ("the rain makes flowers grow" or "sports make people fit"), either about the cognitive dissonance theory, the cognitive element can be in one of three relationships: irrelevant, consonant or dissonant. Irrelevant cognitions are cognitions that have no relationship to each other. For example, "it is raining today", "Mavava is intelligent", "I sent my teacher a birthday card yesterday", "I like playing netball" – may exist simultaneously in someone's head, without having any implications for one another.

In Festinger's theory, consonant cognitions are beliefs or attitudes that are consistent with one another. They are compatible, or support each other. For example, the attitudes pupils express towards school: "I attend school regularly" and "school is good for my education" – or "I exercise regularly" and "exercise is good for my health", are consonant.

Festinger used the term, I think, cognition or knowledge loosely to indicate that, in a psychological sense, a person's awareness of the value and attitudes he/she holds or of his/her beliefs (as discussed above) about objects and events beyond his current perception are not qualitatively different from his immediate sense impressions. Some of these pieces of 'knowledge' may be more important to the individual, or more strongly held, than others; but they all operate within the same medium –individual consciousness.

The reader will recall, as noted already above, that one of the important themes of dissonance theory relates to attitude change. That is, awareness of inconsistent cognitions produces an unpleasant state of tension, which can be reduced by changing the inconsistent cognitions or adding new consonant cognitions. In this dimension cognition of the physical environment has also been subsequent (indicated). For example, cigarette smoking and lung cancer were often used by Festinger himself (see Festinger, 1957: pp.2-3, 19-20), to attempt to predict when and for whom dissonance provides motivation to change behaviour or attitude. According to Festinger, the cognitive element "I smoke" would obviously change to "I don't smoke". To give a similar example in the school context and, with respect to the present moment findings, it may be said that the pupils' attitude towards their school "I dislike school" could change to "I like school"; also "I write graffiti" could change to "I do not write graffiti"; or "I litter" could change to "I do not litter". Thus a critical point in the theory is that one of the ways in which a person can change a set of dissonant cognitive elements to a set of consonant behaviour, if that behaviour compromises one of the dissonant elements.

However, one problem with dissonance theory is that it does not allow precise prediction of how dissonance will be reduced. That is, will the individual change a dissonant cognition, add consonant cognitions, or change the importance of the cognitions? In fact, although Festinger (1957) argued that these were the only ways to reduce dissonance, recent research (Zanna and Sander, 1987) has found that people sometimes use other methods to do so. They found another method of reducing dissonance. Subjects were assigned to write a counterattitudinal essay along with two other participants, rather than doing so by themselves. These subjects showed little attitude change after writing the essay, and data suggested that this was because they were able to diffuse responsibility for the essay to the other subjects. Presumably, it was easier for them to deny personal responsibility for the decision, blaming it on the other two partners, than to change their attitude on the issue.

As noted above, psychological dissonance theory, as Festinger calls it, also maintains that persons will have relationships with not only each other but also their physical surroundings are influential and need satisfaction (Festinger, 1957: p.9). For instance, dissonance may be viewed in terms of physical environment. The nature of this fit may have an important bearing on people's emotions (attitude) and physical well-being and behaviour. It may then be argued in light of the above literature reviewed and empirical findings that person- physical environment fit is high to the extent that a situation or setting supports personal needs and goals and law to the degree that these goals are blocked by the physical environment constraints. For example, it was noted, in the present empirical analysis, that the pupils preferred a quieter classroom arrangement for exams; however a classroom could prove to be quite stressful (noisy) in the sense of being dissonant with the pupils' needs of conditions for exams, producing an unpleasant state of attitude in the pupils. A case in point, at this stage, to make an argument about is 'how pupils' actively or behaviourally interpret their school's physical environment'. It has been asserted (Rutter et al, 1979; Tattum, 1986; Elton Report, 1989) that behaviour in school is due in part to the school environment itself, a case argued earlier in chapter 3.

General comments on this section and some more implications for this study

It should be noted that the two consistency theories reviewed above have often, I think, attracted a great deal of research attention because of their wide range of application. In connection with the present study, they raise the question of when and if pupils' attitudes will emerge as behaviour. Patterns of attitudes are seen to consist of both physical and social environment. That is, that people hold attitudes for or against the physical objects or conditions (e.g. cigarette) – just as much as certain people are liked or disliked by others (e.g. dislike of a disruptive pupil). In other words, the physical environment is seen as stimulating cognitive processes related to understanding and evaluation. In terms of attitude as a way of evaluation, the theories hold that people must judge the quality of their physical environment favourably or unfavourably. The argument for this user's evaluation is that some physical environment conditions obstruct rather than support the official activities of their occupants. Taken from this point, it makes it possible to argue that pupils' attitudes have links with their school's physical environment. I concentrate here on currently available data (already presented above). For example, in the field study concerning 'why pupils might like or dislike their school', the sample occupants' responses advocated that it is partly determined by the physical school environment factors, such as academic facilities, class size, sports facilities, quality of furniture, noise level, quality of decoration, orderly environment or uniform.

When the sample respondents were asked to define the standards of their school's physical environment, certain physical arrangement characteristics evoked favourable evaluation, whereas others tended to be disliked (seen as unsatisfactory).

One rather dramatic example was the preference of importance associated with aspects of the physical school environment. Data show a high degree of similarity among the respondents of most physical school environment factors. Although all the factors included in the assessment received recognition of importance, high individual differences in terms of cognitions existed among the sample respondents' attitudes,

referring in a broad sense to the physical school environment as remarkably important. Specific elements received different levels of importance (psychological dissonance example). In certain elements the subjects have been found to share common attitudes of importance (balance example: that is, Heider's balance theory postulated that people like others who share their important attitudes and dislike others who hold different views on important issues, and that when this fundamental assumption is violated, balance theory predicts that people will try to change their attitudes towards the other person or towards the attitude issue) than others (see Table 17 above).

As already noted above, a major assumption of the inconsistency theories is that people do not only evaluate situations (or objects) as favourable or unfavourable, but that they act accordingly (that attitudes may or may not lead to behaviour). From this point of view, in respect of the present analysis, the sample occupants also responded to the characteristics of the physical school environment: certain of the characteristics (such as attractive school buildings, suitable heating, comfortable furniture, many litter bins, reasonable class size, attractive decoration) evoked perceived "good" behavioural intentions, whereas others (such as teaching in dining hall, insufficient material resources for subjects, inadequate sports facilities, graffiti on wall, broken windows, slippery classrooms) tended to be associated with perceived "bad" behavioural intentions.

To sum up, however, the interesting point that has to emerge from this present analysis is that not all people will evaluate their environment with behavioural intentions. For example, at several points in the present analysis, a number of the sample occupants remained undecided and some (a few) indicated that their behaviour will not reflect or relate to the situations. This finding suggests that some people may evaluate a situation with their (perceived) behavioural intentions than others. With reference to attitudes leading directly to behaviour, the present evidence also revealed that attitudes may not become behaviour because of norms: as shown in the first analysis above concerning school uniform, although the sample pupils expressed negative attitudes towards litter

picking, because of school 'discipline' they actually said they picked litter. The point is that even if and only if there was the relationship between attitude and behaviour – however, societal rules in some ways would make it difficult to operationalise. It is also worth looking at the somewhat empirical work of other researchers in this field, which I shall now review as below, to see what they found.

Box 5: Current literature reviewed on the subject of attitude- behaviour consistency. (It should be noted that these were the available literature to the researcher at the time).

Author	Definition of attitude	Views on attitude-behaviour consistency issue
Krahe (1992)	Not attempted	After examining a number of previous studies, both theoretical and empirical, Krahe (1992) makes the conclusion that to explain a person's behaviour as the manifestation of attitudinal disposition, it might be possible to show that attitude which shapes behaviour only if the "real situation, including attitude itself and behaviour of its participants are all in analysis" (ibid:pp.10, 230).
Gross (1992)	According to Gross, attitude is how good or bad a person considers something or somebody to be. In his own words: "Attitudes are likes and dislikes" (ibid:p.515).	Although concerned with psychology in general, Gross (ibid:pp.514-516) maintains that prediction of observable behaviour through attitude can uncover a person's choice between positive and negative responses felt or intended; but that it cannot explain behaviour in terms of the observation stimulus features of the situation to which the person responds (behaviourally current practical implications). Unfortunately, Gross himself has no empirical evidence to support his views. He based his argument, like many other modern social psychologists do, to the past assumptions and empirical studies. Nothing seems original or new in his work for the present study to examine.
Hayes and Orrell (1993)	Attitude is: "as relatively permanent disposition towards another person or even in our lives. In other words, it is a specific way of looking at someone or something. On a single level, an attitude may be a liking or disliking for something. On a more complex level it can include a whole variety of beliefs and feelings for a particular issue" (ibid:p.306).	"... Attitude is likely to affect what we do: whether we are likely to take action in accordance with a particular attitude or not" (ibid:p.307). As can be seen, Hayes and Orrell believe very strongly that there exists attitude-behaviour consistency, however gave no empirical evidence of their own findings, nor suggestions of methods to use in examining the connection.

Hewstone et al (1993)	Define attitude as: "positive or negative evaluation" (ibid:p.143) "... the readiness to behave towards a certain object in a special way" (ibid:pp.143-144). (a) "knowledge or thoughts someone has about an object"; ... (b) "positive or negative evaluation"; ... (c) "the readiness to behave towards a certain object in a special way" (ibid:pp.143-144). The authors go on to argue that "this readiness for behaviour does not necessarily imply that the behaviour will actually be shown."	Hewstone et al (1993), after reviewing a large amount of literature dealing with attitude-behaviour consistency, have this to say: "The question 'Are you attitude and behaviour correlated?' is not a very fruitful one, because it turned out to be too global or undifferentiated." "When are attitudes and behaviour correlated? What factors affect the size of the correlation, when and if it is found? ..." (p.159). Hewstone et al goes on, then, to suggest that "... attitudes based on direct experience remained better predictors of behaviour than other attitudes" (p.162).
General comment: It can be seen from the above review that only Hewstone et al (1993) seem to suggest a new direction of understanding of attitude-behaviour relations. As the suggestion is so recent, it is still not examined. The next part of the present analysis will attempt this approach. This approach appears also to reflect the suggestion made by HMCIS (1993) that research into understanding behaviour and discipline quality in the school should include real evidence of the situation and pupils' action (pp.5, 5), mentioned earlier. The next analysis will attempt this method.		

EMPIRICAL EVIDENCE ON ATTITUDE-BEHAVIOUR CONSISTENCY

As we have seen, the above theories attempt to link attitudes to behaviour. In this section, empirical studies are reviewed. The studies selected here are those which are best known and most widely reprinted and cited. Also, it should be noted that this review section builds on the previous literature and prepares for the next stage in this study.

La Piere's (1934) well-known investigation of racial discrimination can be seen as relevant to this argument concerning attitude- behaviour relationship, particularly the result of the study (as reproduced by Thoman, 1971; Warren and Johoda, 1973; Pennington, 1986; Ajzen, 1988; and cited by Gross, 1992). La Piere travelled around America with a Chinese student and his wife, expecting to counter anti-oriental attitudes which would make it difficult for them to find accommodation. But in the course of 10,000 miles of travel they were discriminated against only once and there appeared to be no prejudice. However, six months later, when La Piere sent a letter to the 251 establishments they had visited asking if they would accept Chinese clientele, 91 per cent

of the 128 which responded gave an unqualified "No", one establishment gave an unqualified "Yes" and the rest said their decision would depend on the circumstances. One single action, accepting a Chinese couple as guests in a restaurant or hotel, was found to be inconsistent with another single action, refusal to accept Chinese guests expressed in response to a written inquiry. Findings of this kind are, of course, hardly surprising if we recall that any single response tends to be highly unreliable. That is, inconsistency between different actions may be due, at least in part, to unreliability of measurement (see Ajzen, 1988). In some ways, to turn away three guests (La Piere himself and the Chinese couple) is clearly against the financial interest of a hotel (I believe, at least in the short-term). In this case, in a sense, La Piere's conclusion was that the attitude was not consistent with behaviour, and disagrees with the relationship between attitude and behaviour.

Warner and De Fleur (1969), however, reported moderating effects of the situation that appear to be at variance with La Piere's findings. A large sample of college students was divided at the median score on a scale designed to assess attitudes towards Blacks. The measure of behaviour was each participant's signed indication of willingness or refusal to perform one of eight behaviours ranging from making a small donation to a charity for Black students to dating an attractive Black student. These commitments were elicited by means of a letter sent to each participant. For half the sample, the letter assured anonymity of response, whereas for the other half it indicated that the participant's response would be made public in campus newspapers. There is a clear prima facie expectation that the public condition involved greater social constraints than did the private condition. The writer might thus expect behaviour to be more consistent with attitudes in the latter than in the former. Although the results of the study must be interpreted with caution because of a very low response rate, they showed exactly the opposite pattern of La Piere's conclusion. The effect of attitude on signed approval or disapproval of the requested behaviour was greater in public conditions (a different of

77.8% between respondents with positive and negative attitudes towards Blacks) than in the private condition (a difference of 17.2%). This study can be found in the work on *Attitudes and Behaviour* by Thomas (1971) and is also apparent in Ajzen's (1988) work on *Attitudes, Personality and Behaviour.*

Another study which appears to contest findings of attitude- behaviour relationship is the experiment reported by Himmelstein and Moore (1963) and also reported in Ajzen (1988). A sample of white male college students first completed a scale assessing attitudes towards Blacks and, some time later, reported for a psychology experiment. Upon arrival, the participant found another student (a confederate), either black or white, already seated in the room. While they were waiting for the experiment to begin, a (white) confederate entered the room holding in his hand a petition to extend the university's library hours on Saturday night. The Black or White confederate either signed or refused to sign the petition and, following this manipulation, the naive participant was asked to sign. His conformity or lack of conformity with the response of the confederate served as the measure of behaviour. The data revealed a non-significant correlation between general attitudes towards Black and conformity with the Black confederate.

Kothandapani (1971) (work apparent in *Journal of Personality and Social Psychology*, 1971, No.19: pp.321-33) assessed the attitudes of married women towards personal use of birth control methods by means of 12 standard scales. The self-reported use or non-use of such methods served as the behavioural criterion. All 12 attitude-behaviour correlations were found to be significant, with an average coefficient of 0.69. Different analyses seem to come up with different results.

More recent research has also provided little evidence in support of behavioural consistency. For example, Funder et al (1983) obtained two scaled resistance-to-temptation measures in children: resisting approach to a present and resisting attractive but forbidden toys. Although the scales' reliabilities were not reported, each was based on more than a single observation and was thus likely to have had at least

some degree of reliability. The correlation between them, however, was only 0.20 (a study cited by Krahe, 1992).

Manstead et al (1983) reported a study on infant feeding practices. Towards the end of their pregnancies, women completed a questionnaire than assessed, among other things, their attitudes towards breast-feeding (as opposed to bottle-feeding) their babies. Six weeks following delivery, a questionnaire sent to each woman ascertained her actual feeding practices during the preceding 6 weeks. Attitudes toward the behaviour of interest were found to have a correlation of 0.67 with the feeding method employed; and this study has now been cited by social psychologists such as Ajzen (1988).

As a final example, in a systematic re-examination of behavioural consistency with what the authors call reliable measures, Mischel and Peake (1982a, 1982b) represented data in the domain of conscientiousness among college students. Nineteen different action tendencies were observed on repeated occasions, including class attendance, punctuality in handling in assignments, thoroughness of notes taken, and neatness of personal appearance. The average correlation among these different kinds of actions representing conscientiousness was a mere 0.13.

From the above reviewed empirical studies, attitude-behaviour relationship is not as straightforward or simple a matter as would seem at first sight: some findings disagree and others agree. The studies have shown that my own fieldwork is yet incomplete to draw conclusions on attitude-behaviour relationships, for the fact is that all the reviewed studies are repeated analyses. What seems interesting in the studies is that different study fields produce different results. It might be the study "fields" producing these differences: disagree and/or agree on attitude-behaviour relationship issue. The present study has not sought to justify the relationship – hence a second field study is required. The relationship between attitude and behaviour, and the physical school environment and behaviour, is still worthy of investigation. This is the purpose of study 2.

ANALYSIS OF DATA SET 1 BASED ON ANDERSON'S FIVE ESSENTIAL ATTITUDE COMPONENTS

As repeatedly mentioned throughout this study, the aim of this thesis was to investigate the extent to which, if at all, there is a link between the physical school environment and the secondary school pupils' behaviour. However, my first set of data was concerned with perception and preferences. I think this happened because the questions I used were perhaps not behaviourally directed but rather attitudinal directed, which in fact I did not consider when I produced the questionnaire. It may also be argued that it happened because I used only one method. Also, at that stage I was concerned with the review, to confirm the usefulness of HMI list of the school physical environment characteristics and framework. Of course, this is an important discovery, in that attitude itself is also an element of psychology, and this is an evidence for arguing Clark and Round's (1991:p.20) claim that "children don't care about buildings, and the environment that affects them". Furthermore, Allport (1968) considers attitude "probably the most distinctive and indispensable concept in social psychology. No other term appears more frequently in experimental and theoretical literature" (ibid: p.59). Allport adeptly points out that the reason for this frequency is that the concept of attitude is a multi- dimensional concept, capable of a wide range of different interpretations. Thomas and Znaniecki (1918) are given credit for the systematic incorporation of attitudes into social psychology and sociology by demonstrating their relevance in a study of the behaviour of Polish peasants. (In other words, the term 'social attitude' was introduced in social psychology by Thomas and Znaniecki, in order to explain behavioural differences in everyday life between Polish farmers in Poland and the USA. Since then, many different definitions for the increasingly popular concept of attitudes have been proposed.) In a school context, the practical view, I think, is that attitude study may serve one of the following (with respect to the present findings):

1. To understand better pupil's behaviour in school.

2. To understand how a school is perceived by the pupils and teachers.

3. To understand what needs to be improved.

The emerging notion, then, is if the physical school environment can be related to attitudes of pupils and teachers, is there some further link between attitude and behaviour? To emphasise, the next stage of the thesis therefore involves an attempt to find a theory which would allow the research to establish the links in the chain: that is one between the attitudes and behaviour. For that reason (as can be seen above) a number of theories were analysed: Allport (1935), Heider (1846, 1958), Festinger (1957), Fishbein and Ajzen (1975) and Anderson (1981). It was decided to analyse the data set 1 using Anderson's (1981) theory in order to examine the extent to which Andersonian analysis shed new light on data already derived and point a way forward for further data collection. Anderson's theory says that attitude with emotion, consistency target, direction and certain intensity is more likely, than without, to lead to behaviour; and analysing data set one I found indeed the questions which I asked and the pupils'/teachers' responses do have the characteristics which Anderson described. For the links between Andersonian theory and the questionnaire, the reader is referred to Box 6; the definition of each questionnaire in terms of Anderson's five point theory comes separately after this section, and what follows in, in the main, the theory's link with findings. I consider these in order. It should be noted here that for the purpose of analysis, definitions of Anderson's five essential elements will be rejected at a number of points.

Anderson (1981) argues that the experience of "emotion" must become established in a study of attitude-behaviour relationships. The reason being to reflect on attitude as a tendency, and the relevance here is that it helps to understand tendency of attitude that may lead to behaviour. He described emotion as that set of internal psychological changes which assist a person to prepare for emergencies, and the protection or supervision

(ibid.:p.6). The concern for emotion is addressed that humans are feeling beings as well as thinking beings. The epistemic correlation of emotions are neuronal events in circuits. Anderson argues, then, that it is here important to observe that there is probably no attitude nor behaviour of which emotion does not constitute a part. That emotions play a vitally important role in ordering human experience and without them life would be flat and devoid of excitement. In terms of Anderson, one can argue that emotion provides the stimulus or motivation to act in a certain way; it provides the inner force that would attract one person to an object and including another person, or that repels one person from another/including objects. In so far as the relationship between attitude and behaviour is concerned, Anderson stresses convincingly that emotional components of attitude provides a person with a sense of security, help persons cope with frustration, alert them to dangers and, above all, prod them into action ("psycho- survival process"). Thus, the next question now is "has the Andersonian emotion aspect of attitude theory any reflection at all in my data set 1?" Of course, and indeed, some evidence seems available. As Box 12 (in this study) shows, two questions of the questionnaire addressed "emotion" aspect of attitude: 1) a study of the pupils' attitudes towards school, and 2) a study of the pupils'/teachers' opinion towards inclusion of the physical school environment in analysis of pupils' behaviour. Attitudes towards school (1): shows differences in the respondents' attitudinal and emotional reaction – some, particularly the pupils, felt a "dislike for their school", while others felt positive as "liking their school". Another finding was that the perception of the teachers of the pupils' attitudes towards school was in some ways different from the pupils' self-report: For teachers, all pupils like school, but this is not the case from the pupils' perspective. Concerning inclusion of the physical secondary school environment in a study of the pupils' behaviour, attitudinal emotional responses showed different directions – although the majority of the sample subjects responded positively, there were some responses on the direction of negative feelings. In both questions, which focused Andersonian emotional theory, there were a number of the sample subjects who remained undecided, which

suggests that some feelings are not easy to predict. In connection with behaviour, however, the emotional aspect of attitudes were unexplored: for example, behavioural questions such as 'if you do not like school, what would you do?' or 'would you accept writing a project on the relationship between the physical school environment and pupils' behaviour, why?' were missing in the first analysis.

"Consistency" is defined as differentiation of affective reactions induced by particular situations or settings from affective characteristics possessed by the person (ibid:pp.5, 38, 41). Affective characteristics are defined as the feelings and emotions which are characteristic of people, that is, qualities that represent people's typical ways of feeling or expressing emotion (ibid:pp.3, 5, 9). According to Anderson, someone can argue that only for those persons who define themselves as relatively inconsistent over different situations does a high correlation between attitude and behaviour exist. For those subjects who define themselves as self- consistent over different situations, there exists a relatively low, if any, correlation between attitude and behaviour. The point under consideration is that if those attitudes and behaviours are not unique to individuals, they will have the same effect on the others of the group (Anderson, 1981: pp.55-76). As we can see from the above discussion, Anderson is not only concerned about the origin of the attitude but that persons whose attitudes are determined by the situation will react or behave in the direction of that attitude. In the case of data set 1, this approach was observed. A large sample of the same group of persons were evaluated by the use of questionnaire. Inconsistency was analysed as based on length of time experienced by the subjects: from a short time to a long time. The main purpose of this analysis was to discover what the feelings associated with school factors, as a group, rather not individual innate. In general, the respondents agree on certain points and felt differently in response to the other "target" areas (e.g. like/dislike of school).

Anderson's (1981) third essential feature in the evaluation of attitude-behaviour relationship is "target". It should be emphasised, for the purpose of discussion, that by

the sense of 'target', he meant a particular object, situation and experience (ibid: pp.5, 33) towards which the feeling is directed. The existence of the targets of attitudes are most likely concrete (real and specific) and pertaining to the affections or emotional:

> "A person may react to school, mathematics, social situation, or teaching."
>
> (ibid: p.5)

The central point for target counts is that our understanding of both attitude and behaviour depends on understanding their (attitude/behaviour) relationships with target. In other words, attitude-behaviour relationship results from a relationship (actual, imagined, or anticipated) between a person (or animal) and the "target". Thus, for instance, we cannot understand the relationship between parents and teachers without reference to the pupils (the pupils as the larger of the relationship) or between teacher and classroom sitting arrangements without reference to the pupils (including subject area). Anderson also argues that attitudes involve a choice to be made between or among alternatives: that is, in attitude-behaviour relationship the researcher evaluates the specification of two or more "targets" (ibid: p.119). This Andersonian target theory in fact coincides very considerably with certain steps and findings of my study 1. For example, in the study of the reasons why the pupils might like or dislike school, a number of items within the school factors were listed (as targets). As can be seen in the analysis above, the area explored extended from the general to the most specific, in that comparisons were made between the responses as based on the targets and perception of the respondents of the physical school environment was the specific target (in question). The results were of interest and has a link with the target theory. The approach identified different groups of respondents who associate their feelings towards school with different "target factors". In other words, pupils like or dislike of school have different targets (see Table 11). The judgment of like or dislike of school was based on the physical school environment received frequent and remarkable (e.g. material academic resources 93.9%; sports facilities 67.2%; noise 60%; quality of furniture 58.2% – Table 11) responses. Another

target theory focused measurement concerned the question: "What is the most common physical school environment factor to the pupils?". Again the results showed the respondents in different groups (see Table 13 – e.g. lighting and heating 74%; lavatory 58.3%; sports facilities 34.4%). However, each of the target items received at least one or two responses associated with the term "most important", which seems to suggest that if the school has to account for well-being of all the pupils it must account for all the pupils' "essential school related needs". Another measurement which reflects the target theory was on: 'How much are both pupils and teachers aware of the physical environment of their school?" There were two directions of opinion: 1) 'satisfactory' and 2) 'dissatisfactory'. The result links target to direction and showed similarities among the respondents' feelings and it showed differences between schools of certain physical environment conditions (as judged by the pupils and teachers). It should also be noted that the target theory focused analysis, although it supports the HMI (1988-1991) definition of the physical school environment as "good" and "poor" in itself right as solving the problem relationship between attitude and behaviour still seem complex.

Anderson's (1981) fourth essential element in definition of attitude- behaviour relationship is 'direction'. Anderson demonstrates it would be impossible to establish a relationship between attitude and behaviour without reference to "direction". Both attitude and behaviour emerge in their directional responses. By the sense of direction is meant the positive and negative orientation of emotions and feelings towards "target":

> "Direction is concerned with the positive or negative orientation of feelings."
>
> (ibid: p.4)

Put simply, direction has to do with whether a feeling is "good" or "bad". That is, for example, enjoying school would be thought of as a positive feeling while anxiety would be seen as a negative connotation. Most positive feelings would have negative counterparts and vice versa. Hating school would be the negative counterpart of enjoying school. Or, similarly, being relaxed would be the positive counterpart of being tense. Thus, direction of pupils feelings

about certain conditions of the physical school environment were examined in study 1. It became more apparent that the respondents had different directions of feelings (see analysis): some responses point to intensive negative direction (I will behave "worse"), other responses which point to negative direction was 'just' (I will behave "bad"); while on the positive side there were also responses associated with "better" or "good" behaviour. However, there was a problem, that is, some respondents remained undecided, which suggests that it can sometimes be difficult to examine the direction of other people's feelings. It should also be noted that some of the factors associated with probability of "good" behaviour by some respondents were associated with probability of "bad" behaviour by other respondents.

Finally intensity: Applying intensity to the results, it may be shown that attitudes have levels of strength: some attitudinal feelings are typically stronger than others – "love", for example, is more a stronger or intensive feeling than "like"; "hate" is also more intense than "dislike" (Anderson, 1981:p.4). Also that some people are very tense, while others are somewhat tense. This approach in terms of the first study, as illustrated by Box 12 questions, were asked under which the intensity attitude theory holds. For example, studies were made of the pupils' attitudes towards their school: "like school very much" to "like school" and "dislike school very much" to "dislike school". The results also showed several intense responses: on the positive side, some of the pupil subjects rank "like school very much" and others rank "like school", while on the negative side there were those pupil respondents who rank "dislike school very much" and others who felt "dislike of school". As can be seen, indeed, the responses possess various degrees of attitudes towards their schools. There were also differences between teachers' responses to what they thought the pupils' attitudes towards schools are and the pupils' own responses. One final point is that I did not specifically explore the intensity as a process of sorting out information regarding attitude-behaviour relationships; rather I examined the extent of the pupils' feelings towards their schools.

Some general comments

I should say Anderson's (1981) work has some useful contribution to this study because he has developed fairly a systematic approach in attempting to deal with attitude as a field of psychology and in attempting to deal with the dilemma of attitude-behaviour relationship. Also, his work is more recent. Anderson's (1981) definition of the concept of attitude go far beyond the usual – as indicator or predictor of behaviour – in that it suggests more detail in the field of attitude psychology (particularly for the researcher) as contributor to learning about a person's needs, state of enjoyment, state of anxiety, sense of social justice, sense of social injustice, and self-security or self-control. Above all, for the purpose of the present study, Anderson's theory has pointed out that attitudes exist, but as predictors or indicators of behaviour will likely remain complex. In other words, the position of attitudes as indicators or predictors is more dependent on probability, because when it comes to the question of evaluating the essential characteristic of attitude which are connected with behaviour there are degrees and a person's differences of predispositions to respond. These views have, indeed, been confirmed by some of the findings of data set 1. However, the terms "complex" and "probability" or "likeliness" used in defining attitude-behaviour relationship, I think, makes the assumption that attitude based on direct experience remains better predictors of behaviour than others. This notion has the support of the modern social psychologists such as Hayes and Orrell (1993), and Hewstone et al (1993), shown in Box 6.

AN INTERPRETATION OF THE QUESTIONNAIRE USING ANDERSON'S FIVE ELEMENTS OF ATTITUDE

Box 6: Definition of questionnaire of the present study in terms of Anderson's (1981) "essential" components of attitudes.

Questions of the questionnaire of the present study		Task	Andersonian essential components of attitudes
1.	"How long have you been in this school?"	This question evaluated among the pupils/teachers the length of time they have been in their school.	Consistency
2.	"How much do you like the school?" Teachers' opinion on this question was also asked for.	This question evaluated in the main: a) perception of the pupils of their school in general as defined by "like school – dislike school"; and (b) the teachers' view on this notion was explored. Furthermore, this question also evaluated strength of perception of the respondents as defined by the scale ranging from "like very much" to "dislike very much".	Emotion Intensity
3.	"In general, when you are judging whether you like a school or not, how important are the following elements?" The question comprises 12 statements (elements). Teachers' opinion on this question was asked.	This question explored the status (position) of the physical environment of school among other factors as the determinant of pupils' liking of school or not.	Target
4.	"Below is a list of 10 important aspects of the physical environment of school. Please write down 1, 2 and 3 against the three most important things for you". Teachers' opinion on this question was asked for. There was also space for explanation as to why those items were selected.	This question measured the specific elements of the physical school environment that pupils like most and are very much concerned about it.	Target
5.	"You know, different schools have different conditions of its physical environment. In your school, how do you rate the following facilities?" This question compresses 20 statements.	This question was to do with measures to ascertain the pupils'/teachers' awareness and concern for differences in terms of conditions of the physical school setting.	Target
6.	"How do you think each of the following would effect your behaviour if they existed in your school?" Teachers' opinions on this question was asked for. This question compresses 15 statements.	This question analysed probability-improbability of the physical school environment-pupil behaviour relationships.	Direction
7.	"Please read each of the following statements. Put one tick in the box which best shows how you feel about the statement". There were seven statements.	This question analysed feelings of the respondents regarding the inclusion of the physical school environment conditions in the field of behaviour management in the school.	Emotion

This section of the study reviews individual questions of the questionnaire used in the study 1, in light of Anderson's (1981) five elements of attitude:

1. **Emotion:** attitudes are feelings about objects or situations (which primarily involve knowing and thinking).

2. **Consistency:** attitudes are typical ways of feelings. The word typical is an important component of this definition. Humans are not computers. Thus their emotions cannot be programmed to be constant. Instead, humans vary from day to day in their emotional states. Some days people are up emotionally, other days they are down. Despite this variability, however, people tend to have typical ways of feeling. Thus some people generally tend to be up, while others tend to be down. In order to understand the affective domain, we must focus on these typical feelings and emotions. Such a focus is not intended to downplay the variability of these feelings or emotions. Indeed, this variability must be considered if we are to understand the affective realm. Rather, this focus on typical feelings and emotions is meant to provide an understanding of the general way of feeling so that deviations can be noted and understood as well. Say, as for attitudes induced by particular situations or settings: a reasonable degree of consistency of responses is necessary before it can be inferred that persons possess a particular affective characteristic.

3. **Target:** attitudes are directed towards some targets. Target refers to the object, activity, situation, or idea towards which feeling is directed: e.g. a pupil may react to school, unclean toilets, teaching style.

4. **Direction:** is concerned with the positive or negative orientation of feeling. Put simply, direction has to do with whether a feeling is "good" or "bad". Some seem to be innately good or bad: pain is bad and pleasure is good. Also enjoying school is thought (HMI, 1987) of as a positive feeling, while anxiety usually (Tattum, 1986; Department for Education and Science, 1993) takes on a negative connotation. Most positive feelings have negative counterparts and vice versa. Hating

school is the negative counterpart of enjoying school. Similarly, being relaxed is the positive counterpart of being tense.

5. **Intensity:** attitudes have some degree of intensity. Some feelings are typically stronger than others. "Love", for example, tends to have stronger feelings than "like". Furthermore, some people tend to have stronger feelings than other. For example, some pupils are very intense ("I like school very much"), while others are only somewhat intense ("I like school").

Although the questionnaire was not designed for the purpose of understanding attitude-behaviour relations, the attempt here is to trace the connections between attitude and the earlier study. Another reason for this focus was to describe in detail the status of Anderson's five elements in the present study and to understand (gain knowledge) of how widely Anderson's views may be used in the psychology of attitude (importance of Anderson's approach for research into understanding attitudes); and, also, as a means of deriving significance for my data.

Question 1

Question 1 explored length of time the subjects had been in their school. In terms of Anderson's five elements, the question may be defined as follows:

Point 1: it had no reflection of emotion.

Point 2: the question assessed typically the length of time or period subjects had already spent in their school (consistency).

Point 3: it assessed length of time so the targets are two – i) the length of time of experience in the school, and ii) range of differences in terms of length of time between the respondents.

Point 4: the direction of this question points to length of time of experience in the school.

Point 5: it had no reference to intensity.

Question 2

How much do you like the school? In terms of Anderson's (181) elements of attitudes, the question involved:

Point 1: Emotion.

Point 2: Consistency.

Point 3: Target.

Point 4: Intensity.

Point 5: Direction.

Question 3

Because school can be defined or described in many ways: e.g. school refers to the building itself, subjects taught in the building, furniture in the building, the social interaction that takes place in the building, teachers, the learning that occurs (or fails to occur) in the building. So question 3 analysed the like and dislike attitudes of the pupils in terms of the important aspects or critical features of school. Subjects responded on a five-point scale: very important, important, not sure, not important and not at all important. The rationale behind this question was that individual pupils may react to different aspects or features of the school. In other words, without a clear, concise definition of the school as target, one cannot be sure as to the particular aspects or features of the school to which an individual pupil is responding or reacting. As a consequence, an individual's responses or reactions may not be very informative. Furthermore, comparisons among individual pupils may be difficult if not impossible, since they may in fact be reacting to different aspects or features of the school. In Anderson's (1981) terms:

Point 1: the question assessed feelings of value (emotion).

Point 2: the question assessed typical ways of feelings towards school features, in connection with their interest in the school (consistency).

Point 3: the question referred to school features, so the school was the target.

Point 4: the phrase "very important" and "not at all important" examined the intensity of the feelings of the importance.

Point 5: the two opposite phrases "important" and "not important" explored direction of the feelings of important.

Question 4

Question 4 specifically explored how important pupils may define the physical environment of the school. The physical school environment can be defined or described in many ways: tables, toilets, playground, books, the buildings, crowding, the teaching equipment present (or not present) in the classrooms. The rationale behind this question is that individual pupils may associate importance to different factors or conditions of the physical school environment. The aim was to make sure than an individual pupil's responses make sense. Thus, a list of 10 elements of physical school environment were given to subjects. The subjects were asked to give a rank 1, 3 and 3 to the items which they felt were most important to them. In light of Anderson's (1981) five attitude elements, thus:

Point 1: the question assessed feelings of importance attached to the physical elements of school (emotion).

Point 2: the question assessed typical ways of feelings towards the physical school environment (consistency).

Point 3: the target of the question was the physical school environment.

Point 4: degree of ranking 1, 2 and 3 explored degree of intensity.

Point 5: there was no exploration of direction in this question.

Question 5

Question 5 explored the subjects' definition of their school's physical environment. 20 features were listed and subjects responded on a five-point scale: very satisfactory, satisfactory, not sure, dissatisfactory, and very dissatisfactory. In light of Anderson's (1981) elements of attitude, it follows that:

Point 1: the question assessed feelings of satisfaction and dissatisfaction (emotion).

Point 2: the question assessed typical ways of feelings towards the physical characteristics of the school environment (consistency).

Point 3: it assessed awareness in terms of the physical school environment, so the physical school environment was the target.

Point 4: the phrases "satisfactory" and "dissatisfactory" assessed the direction of the feelings.

Point 5: the phrases "very satisfactory" and "very dissatisfactory" explored the intensity of the feelings.

Question 6

Question 6 was concerned with the relationship between the physical environment and pupils' behaviour. A list of 15 features of the physical environment were given and the subjects responded on a five-point scale. The question may be defined in Anderson's (1981) five attitude elements as follows:

Point 1: the question assessed feelings of likeliness of "good" and "bad" behaviour (emotion).

Point 2: the question assessed typical ways of feelings towards their reaction to the physical school environment situation (consistency)

Point 3: it assessed how pupils would respond or react or behave in a particular situation, so the target here is behaviour.

Point 4: the phrases "good" and "badly" in terms of behaviour explored direction of the responses.

Point 5: the phrases "better" and "worse" explored intensity of the feelings.

Question 7

Question 7 explored further existence of the physical school environment-pupil behaviour relationship. It also searched for feelings towards inclusion of the physical school environment in the behaviour management field in school. Seven statements were given and the subjects responded, again, on a five point scale: strongly agree, agree, not sure, disagree and strongly disagree. It can be fit into Anderson's (1981) five elements as follows:

Point 1: the question explored feelings of "agree" and "disagree" (emotion).

Point 2: the question explored feelings typically associated with existence of the physical school environment-pupil behaviour relationships (consistency).

Point 3: the question explored relationship existence and research development in the area, so there are two targets: 1) the relationship, and 2) research warranty.

Point 4: the phrases: "agree" and "disagree" explored direction of the responses.

Point 5: the phrases: "strongly agree" and "strongly disagree" explored intensity of the feeling.

Finally, as can be seen, the questionnaire seems to define very well with Anderson's views, suggesting that Anderson's theory for the present moment analysis (of attitudes) has been helpful in that it has pointed the way forward to how the research can progress.

Even so, it has clear measurable attitude patterns. In other words, it has shown that, actually, the questionnaire was an attitude questionnaire rather than directed at behaviour. This questionnaire related analysis has contributed a great deal in that it has defined the kind of data which was obtained in study 1.

THE INFERENTIAL LIMITATIONS OF STUDY 1

Up to this point this section has been a re-analysis of the information obtained in the first field study in light of the attitude theories. The results show that the pupils' responses (including that of teachers) are systematically related to the characteristics of the physical school environment. But links, if any, of pupils' behaviour with the physical school environment needs naturalistic-observation in which behaviour is recorded as it occurs in the natural setting; because the attitude-behaviour links appears unclear. Also, this ambiguity, for the present purpose, invites a further empirical study. In addition, it should be noted that this section provides a framework/purpose and sense of direction for the next study (2).

In this context, the inferential limitation of study 1 should be mentioned – for making the decision of analysing the details of these cases carefully. Necessarily:

1. Although the questionnaire return of the first study was very high, the proportion of undecided responses was also very high. As mentioned elsewhere, undecided responses are not valid for drawing tentative conclusions. Undecided questions do not answer the research question. I think undecided responses are the consequence of limitations of the questionnaire used (in a way of asking extended questions and collecting reliable data) to deal with the issues of the relationships between pupils' behaviour and the physical environment of school. For this reason, the data should be validated by other research methods, so this makes it possible to return to the field for a second study.

2. In fact, one of the reasons for the next study was to obtain more information, sufficient enough (in terms of quality) to be able to reflect on the reliability and validity of the questionnaire.

3. Also, although results of the first study show a high level of awareness and conscientiousness among the respondents about quality of the physical environment

of their schools, it is possible in some ways to argue that social desirability such as favouritism or middling could have been a factor in these high percentages of my first analysis. For example, although it did not include a measure of questionnaire validity, Warner and De Fleur (1969) studied the influence of attitudes upon overt behaviour. In particular, their study was designed to examine the influence of attitudes upon overt behaviour towards Negroes. Subjects were 537 students in a border-state university in the USA. According to the authors the prevailing community norms in this area were hostile to integration. On the basis of responses to a Likert attitude scale, they categorised their subjects as low or high in prejudice. Subjects in such quartile of the attitude distribution were matched on nine social background and demographic variables. The investigators mailed to each student a letter signed by the president of a fictitious student organisation, and asking the recipient to make a commitment to engage in behaviour involving Negroes. Half of the subjects were asked to participate in behaviour which allowed them to maintain a status of superiority over Negroes, e.g. go to homes of potential Negro college students to tell them about life as a college student. The other half received requests to engage in behaviour involving a reduction of social status of differences between Negroes and Whites, e.g. going on a date with a Negro student. All subjects were asked to sign a pledge that they would engage in the behaviour, or if they preferred, to sign a statement that they would not engage in the behaviour. The investigators reported results that appear inconsistent with the original interaction hypothesis. It is worth noting, however, that their results cannot be explained by reference to impression management theory (Tedesch et al, 1971). According to this theory, people tend to create a favourable impression in reporting information in publicly administered questionnaires, rather than facts as it occurs in the "natural" environment. Subjects may hide the correct information. Thus, respondents wanting to place themselves within an apparently popular trend in a

recognised tendency in or expressionist position, say Cohen and Manion (1989), is yet another problem with questionnaire data; and in my first study this might (I suspect) have been the case since the pupils subjects completed the questionnaire in forms of groups. It can also seem that disadvantages of the questionnaire may not be completely eliminated in a research simply by validating it with pilot studies or devising the questionnaire with those who have long research experience, but these approaches can help reduce the disadvantages. I am saying this because, as I noted in chapter 8, I validated my questionnaire in a number of ways and had several meetings with my supervisors while devising the questionnaire – interpretation of the data still show some forms of error. There could also have been elements of fear since the teachers were present at the time of administering the questionnaire. But it would appear premature to give any evidence as to whether or not this phenomenon may have influenced the impressions to the present analysis – for the fact that only the results may be evaluated by another data collected by other research methods. That is, to re-examine the same factors or research question using other methods. Baron and Graziano (1991) have this to say about how to determine 'social desirability' and whether a measurement sufficiently assessed what it wants to assess:

> "... whenever possible, the research should measure constructs in multiple ways ... and if all of them yield results that are quite consistent with one another, then the researcher will have more confidence that 'the case' was really being assessed than if it had been measured in only one way."
>
> (ibid: p.42)

Thus, for the purpose of the second study, it was thought methods of observation, and interview would help to make this point clear in study 2. Some more detailed explanation about these will be provided later.

4. Finally, in 1979 Rutter et al published a report, among other factors, about the physical environment-pupils' behaviour based on data collected in one LEA (Local

Education Authority) area. In Chapter 6 of this study, a critical argument was raised about the validity of using the results produced in one or another LEA areas – with reference to recent writers' (HMI, 1987; Elton Report, 1989) demand for research in the area (and given the fact that schools are not the same in their physical set up). Therefore, to complete and test this criticism, a second study was prepared to cover at least two LEA areas (discussed in Chapter 8). In my first study I covered one area. It is now necessary to obtain data from a second area. The second area is an aspect of the next study.

THE LINKS BETWEEN THE INFERENTIAL LIMITATIONS OF STUDY 1 AND ANDERSON'S THEORY

Anderson's (1981) theory (particularly in terms of emotion, consistency and target) has clear links with these above mentioned inferential limitations:

1. *'Undecided responses'*: As has been noted already, Anderson's dialogue, the "emotion" is an account which primarily involves knowing and thinking about the attitude object or situation. "Emotion" is viewed as a process of acceptance and rejection of an object or situation. The contribution is that person's opinion of an object/situation may be reliably confirmed. Thus, "undecided" information does not permit such a conclusion. Another line of argument is: Anderson's concept of attitude has a clear relevance to target, direction and intensity. "Undecided responses", however, have no such focuses. Study two addresses this issue by mainly using interview methods which allowed the research to seek information by asking extended questions.

2. *'Obtaining more information'*: Anderson employed the phrase "consistency" as a possible approach to uncover external ('environmental') factors associated with attitude. That is, a reasonable degree of consistency responses is necessary before it can be inferred that persons possess a particular affective character towards an

object or situation. Thus, "obtaining more information" may interpret 'level' of consistency of the relationship between pupils' psychological state and the physical school environment.

3. *'Favouritism, middling and fear as factors affecting questionnaire method from measuring accurately what it is supposed to measure'*: That is, these factors minimise the tendency for respondents to give really true responses. In educational research, in the broadest sense, a reasonable technique for solving this problem has been to use many different research methods (Cohen and Manion, 1989; HMCIS, 1993). Although the above described questions of the questionnaire (study 1) define very well with Andersonian elements, they have not been able to explain clearly the position of attitude- behaviour-the physical school environment relations, if any. It seems (as already noted) the first study targeted only attitude and characteristics of the physical school environment, particularly, perhaps, because the questions were not phrased in a way that could reveal behavioural components. These elements will be used in study two.

4. *'Incompetency of data obtained in only one LEA area'*: As mentioned earlier, Anderson's theory takes into account both individual differences and the impact of environmental situation (external factors) on responses. Anderson notes that internal factors within individuals also determine responses to a situation. Providing some explanation that some people demonstrate similar characteristics in different situations and that this can block understanding of influence of the environment in its fuller sense. Anderson, thus, identified "consistency" response approach to determine whether or not the same item(s) or situation(s) may be interpreted differently by different people. That is, consistency responses of different persons would provide support for influence of the 'environment'. This, of course, is closely tied to the issue of obtaining data from one LEA area and using it to document the relationship in all other LEA areas.

PREPARATION OF A FRAMEWORK FOR STUDY 2

A summary scope for study 2

This second investigation was in part designed to test Anderson's (1981) assumptions that attitudes with specific elements of emotion, consistency, target, direction, and intensity may lead to behaviour in the context of school, and the design was based on the discussion about applicability/relevance of Anderson with study 1. Also, the main research question directed to the understanding of whether or not there can be any link between the physical school environment and pupils' behaviour was maintained. In addition, some limitations of the first study, as already defined earlier, were addressed.

A list of attitudes

In order to investigate the relationship between of the physical environment- attitude and behaviour list of attitudes to the physical environment was prepared; and it was thought this would determine attitude- behaviour links. However, the reader is asked to bear in mind that by definition attitudes evaluation refer to a tendency to respond favourably and unfavourably towards a particular target or situations. White (1969:p.85), after a review of a large body of literature, summarised well about the nature of attitudes:

> "No one ever saw an attitude walking around, nor can an attitude be touched."

Also, as considered earlier, Allport (1935) has noted that attitudes, although measurable, are not observable - it is a preparation or readiness for positive or negative responses, which is organised through experiences and activated in the presence of all objects of situations. The attitudes were identified here with these arguments and definitions in mind. So, the following elements are from the first study.

1. The pupils' "likes" and "dislikes" directed towards a school;
2. advocating the physical setting of school as a crucially important factor for identifying with a school: "I like" or "dislike" the school;

3. the physical school environment is valued in its own right as an important aspect of a school, and level of importance attached to each element of the physical settings of school;

4. toilets are evaluated unclean/ugly;

5. characteristics of the physical school environment evaluated as "good" or "poor";

6. Attachment of satisfaction and "good" behaviour with the following characteristics of the physical school environment (and the present argument is that there are signs of positive reinforcement and pleasant feelings to urge or drive forward); that is, the tendency to respond positively towards certain characteristics of the physical environment of schools:

   - carpeted rooms,
   - pleasant display of pupils' work,
   - adequate lighting,
   - especially suitable warm classrooms,
   - sufficient resource materials for subjects,
   - attractive decoration,
   - adequate litter bins,
   - adequate sports facilities,
   - the clean toilets,
   - comfortable furniture fittings,
   - adequate storage;

7. attachment of dissatisfaction and "bad" or disruptive) behaviour with the following characteristics of the physical school environment (and the argument of the present study is that these are challenging attitude connections and dismay – to dispel or

drive away); the tendency to respond negatively towards certain characteristics of the physical environment of the school:

- the split-site of school (without covered way),
- teaching in dining hall,
- broken windows,
- the inadequate lighting,
- the old state of school buildings,
- areas with graffiti,
- the noisy areas,
- the narrow space in corridors and stairs,
- the overcrowding in the classroom,
- inadequate sports facilities,
- uncomfortable furniture fittings (chairs and tables),
- sharing materials with other pupils during lessons,
- insufficient resource materials for subjects,
- the unattractive decoration,
- inadequate litter bins,
- inadequate heating,
- inadequate storage;

8. emphasise that a pleasant physical setting of a school can be treated with respect;

9. feelings acknowledging the physical school environment as an important dimension of understanding behaviour in school;

10. feelings acknowledging that the physical environment of school can affect teacher-pupil relationships and dictates teachers' style of behaviour management;

11. feelings acknowledging that untidy or tidy classrooms have links with pupils' behaviour;

12. feelings acknowledging that school buildings can constrain pupils;

13. feelings acknowledging involvement of pupils/teachers as crucially important in decision making on the physical facilities and in evaluation of school premises;

14. feelings acknowledging inclusion of the physical school environment in the field of behaviour management research;

15. feelings acknowledging that it is necessary to have a smaller teacher/pupil ratio;

16. emphasise that crowding results in difficulty of supervision of classroom for teachers;

17. emphasise that "bad environment"-"bad behaviour";

18. feelings expresses in the statements that "bad environment"-"bad behaviour";

19. emphasise that noisy situations makes learning, attention of pupils, and listening difficult;

20. feelings about school uniform as having a value (unimportant).

However, I pause here to refer to White (1969) who said that teachers are "most interested" in wanting to know what attitudes exist within school. Above then is some evidence of the complexity within school attitudes directed towards school itself, and this is from a perspective of physico-environmental psychology. This analysis is summarised here to show clearly how the first study can link the physical environment of school with pupils'/teachers' attitudes.

Selection of school for study 2

A different secondary school was selected for two reasons. First, it was thought that if the outcome of study 1 is followed in the same place, it would be possible to understand some of the differences and similarities in other schools, and as Hayers (1988) argues, that an influence by the type of environment of the one social setting can be directly evaluated in another of the same culture: thus the study 2 was conducted in a private secondary school for girls. Secondly, the next sample school was self-nominated by the headteacher in consultation with the staff – as they felt the present study was on a topic of interest to them. Also the other major issue regarding self-nominated schools is that it was believed would provide the required information with much difficulty.

Description of the sample school

This was a large independent girls' public day school and sixth form centre. The school was located in the centre of a large city and was founded in 1895. It had both old and new buildings, with the most recent extension having been completed in 1989. Also, the school was split over several sites: Junior Department, sixth form block, Fine Art Department/dining hall, and the main building. Nevertheless, the school had a combination of fresh paint, mixed furniture (old and new) and extensive displays of pupils' work. The school had no playing fields and, thus, pupils used a public playground.

The distribution of ability in the school was described by the headteacher and the teachers as average to above. Also the school was described by staff in general as containing a number of pupils with economically favourable backgrounds: that is, their parents have jobs, then it was thought the pupils would provide truthful information. Orleans (1973), for example, in his study of differential cognition of urban residents found that upper-class residents of Los Angeles provide broader and more accurate information than their middle or lower class counterparts.

Methodological Issues

The second study method had mainly two components: direct 'participatory' observation and interview. All the methods (interview, observation) used are defined and described in chapter 8. Moreover, the sample of the respondents for the interview study are presented together with the actual results later in this chapter. In particular, observation and interview methods are justified on the following grounds:

1. In the area of attitude-behaviour consistency (which has become an important part of the present analysis) studies, Fishbein's (1967), Keisler et al's (1969), and Pennington's (1986:pp.78-79) argument about methodology is that most of the researchers failed to find attitude-behaviour consistency because they used a single technique or the wrong method of measurement. (For example, Fishbein, 1967, has summarised many studies on attitude-behaviour consistency, in terms of methodology, as follows: "More often than not, we have attempted to predict some behaviour from some measure of attitude and found little or no relationship between these variables", in Thomas edition, 1971). Although they themselves have not suggested one, it was decided not to use just one method in this study and since the questionnaire method was used in study 1 of this project, it was decided to use observation and interview as the alternative explanation.

2. Another argument about methodological problems in analysis of attitude-behaviour consistency has been offered by Allport (1935). But this time the issue of the problem seemed to move from use of single methods to questioning statistical reliability – failure to result in actual behaviour. Allport suggests that his problem, whether or not there is attitude-behaviour consistency, could be best resolved by a qualitative data, relating attitude to behaviour. The principle of qualitative methods states that the researcher involves observation of how the 'natural setting' works. The view of Cohen and Manion (1989:p.8), Coolican (1990:p.66) and Bell

(1993:pp.5-6) on the relationship between qualitative data and observation techniques may be summarised as follows -

> Data in qualitative form cannot avoid observation. That researchers adopting a qualitative perspective are more concerned to understanding the way in which the individual interprets the world in which he/she finds himself/herself. And that such researchers seek insight rather than statistical analysis.

It is here that observation methods proved significant in the second analysis of the present project, to demonstrate that actually or not behaviour is consistent with attitude. The attitudes I observed were those already listed above, noted in study 1. The interview aspect of the method was used here for the similar reason, i.e. the basic data of interview studies were 'what did a pupil say he/she did and/or what did a pupils say he acted' and also ''what did a teacher say how pupils acted in a given physical school environment situation or stimulus?'

3. Methodological problems in analysis of attitude-behaviour consistency have also been addressed by the modern social psychologists. As summarised in Box 11 (earlier in this chapter), they suggest that the issue of attitude-behaviour consistency could best be determined by analysis based on direct experiences. However, this approach has yet received very little, if any, empirical attention. It was, therefore, thought to make an attempt to the approach and see if it works. In this case, as can be seen, Hewstone et al (1993) are the most recent theorists in making this claim. It was, then, thought the best means to create data in study 2 would be by observation and interview technique.

4. The observation method was considered to be particularly helpful in analysis of attitude behaviour links, but this is not the only reason for using the method here – participant observation has been popular in many investigations. For example, much of what we know about animal behaviour, particularly that occurring (Skinner, 1953) outside laboratory settings, has been obtained by researchers

observing animals in their natural habitats. For years, behavioural scientists (Bandura, 1965; Cohen and Manion, 1989) have been using observational methods to study humans in such "natural habitats" as small towns, urban areas, and schools and other institutions. The area of psychology concerned with studying natural occurring human behaviour in these and other types of setting is often called ecological psychology (for details of ecological psychology theory see chapter 4). Ecological psychology, like 'physico-environmental' psychology is concerned with examining the relationship between the environment and human behaviour. Relevant to the present study, and possibly the best known research in this field, was conducted by Roger Barker (1968), who made detailed observations of people's activities in various physical environment characteristics. Ecological psychology, with its emphasis on observing behaviour in natural settings, has made a considerable contribution to physical environment psychology. According to Mercer (1975), ecological psychology, in terms of use of observation, 'is having a very powerful effect, not only on psychology of physical environment, but also on the field of psychology as a whole, an approach which will do much to expand the narrow horizons of a great deal of modern psychology' (ibid:p.18). Along this line, Altman (1973) states in discussing the increasing importance of behavioural observations in physical environment psychology:

> "Barker-type work occupies more and more time at conferences, sessions are increasingly committing themselves to behavioural observations, it is likely that the coming years will show a surge of energy in this direction."
>
> (ibid:p.117)

Observation then may often be the most efficient way to collect data on behaviour. As already mentioned above, the present study falls under this category, it was, thus, thought that involving observation techniques would aid enormously in obtaining a better (correct) quality of information. For observation

guidelines/observation recording forms see Appendix 6A/6B. However, it was also thought to gather information of relatively deeper value (Lemin, Potts and Welsford, 1994), it may be necessary to probe individuals' responses to questions through more in-depth, face-to-face interview, and for the interview guidelines see Appendix 7A/7B.

In general, the following quotes make plain the thought behind the selection of methods in the present analysis:

1. "A scientific approach to human social behaviour does not dictate one and only one method of research. There is not a single research method that is 'science'."

   (Baron and Graziano, 1991:p.61)

2. "To obtain meaningful evaluations of the sociophysical environment, it is often necessary to employ multiple strategies of assessment. For instance, questionnaire and interviews pertaining to the physical ... settings can be supplemented by observation measures."

   (ibid:p.584)

Some limitations of Study 2

Some problems were experienced in deciding how to carry out the second study:

I start with the observation study. Before actually recording behaviour, it was necessary to attend the school for some time in order to let the pupils become accustomed to the observer – the fact that the pupils seemed not to regard me as a teacher came in useful, partly because they did not disturb me as I recorded. It may be that some of their 'normal' conducts with the physical school environment were not displayed as a result of this sort of awareness.

Observations of behaviour were made with regard to one main study: a "static" study. In this second analysis, a transverse study was made, examining different individuals at approximately the same time. It would have been impossible to study each pupil in sufficient detail at this short time. The limitation is that the observer cannot see everything going on around him at the same time.

Turning now to the interview study: Because of the self-selecting nature of the sample school, it was expected that responses would be assuredly in a truthful direction. This expectation was confirmed: most of the interviewees turned up on time, all the selected interviewees turned up and most of the interview items received responses, although some of the answers vary from respondent to respondent. This bias, about receiving different views on a single item, in the sample was built into the project from the outset (for example, it was difficult to follow respondents in study 1 because they were not asked to give their individual identities) and interviews were few in number and its implications must be borne in mind in reading and interpreting the findings. Specifically:

- there is no information about differences between older and younger pupils, nor sex differences, and this point will be reflected on again in the concluding chapter;
- I cannot say how typical or representative these pupil/teacher respondents are of this school in general;
- any implications for schools in general must, therefore, nothing can be inferred directly of a general nature from a sample of 3 schools.

However, precisely because the sample pupils/teachers consist mainly of those who had long experience in the school, as well as the fact that some of the teacher subjects had been to other schools (selection of pupils was done by the headteacher/teachers and based on length of time they had been in the school. The same was the case with the teachers selected for interview – they were chosen so that they could tell how they behaved, particularly the pupils, at the time when the school was not extended and when the buildings were old and not painted. Teachers were chosen for a similar reason, how children behaved). Respondents with long experience have been recognised as a source of correct information. Bannerjee (1971), for example, found people who had lived in Boston longer were better able to identify correctly and locate images in photographs of their city. Also, Heft and Wohwill (1987) found that older children and adults provide

more accurate and detailed information on their environments than younger children. As such, it was decided to base the presentation of the findings on the sample school as a whole, with particular reference to quotes from the respondents; observation notes being included to illustrate the quality of the findings. Finally, one stylistic point should be noted. That is, to avoid clumsy wording, the term 'pupil' is used most throughout this study, but it should be understood to include 'students' and 'school children'.

Summary

This section contains descriptions of a summary of the intentions and procedures for study 2 (which set up to examine attitude-behaviour consistency/seeking to understand the links, if any, between the physical school environment and pupils' behaviour); attitude in general situations under which pupils were observed, the pupils/teachers were interviewed, as well as some details of the pupils themselves. An account is given of the methods used and some problems are discussed in connection with these approaches.

RESULTS OF STUDY TWO

The study was undertaken over a period of two weeks, towards the end of the Christmas term 1993. The data of the second study were gathered using the observation and interview methods (for details on these methods, see chapter 8) and the results of the study are mainly presented in this fashion, as below.

Observation

Observation was used to explore the current situation (that which is in existence now) of the main question under study. An age range from 11 to 18 plus pupils were observed in different aspects of the school's setting. As will be shown below, the findings from observation are interesting, in that it will not only show degree of agreement or consistency with the result of the questionnaire, but it identified some evidence of the

physical school environment influences on the pupil (the quality of the physical school environment-pupils' behaviour relationships). Furthermore, observation data provided evidence of the quality of experience, in terms of the physical settings that the school provides for its pupils. It should, in addition, be noted that all classes were observed by the researcher which lasted for 45 minutes, except for 2 observations in the Fine Art lessons which lasted for 1 hour 10 minutes. Information was recorded on a form prepared by the observer specifically for this study, and more details can be found in Appendix 6B. Details for each situation observed were as follows:

The split-site of a school

Observation with regard to the split-site of school showed no specific kind of pupils' behaviour link with it. However, there were concerns noted regarding the movement of the pupils between the sites of the school. For example, it was noted the time set for the pupils to move from one site of the school to the other was ten minutes, and most often these movements were strictly guided by the teachers. I became aware of this point, when actually the fourth pupil subject reported for the interview 10 minutes late of the agreed time, which seems to suggest pupils would report late for classes or lessons if they were left to walk on their own (without guidance of the teachers). As the student comments:

> "I am sorry for this much time wasted. It is because, you know, I had to walk a long way from the sixth form building."

It was also noted that the split-site of the school had an impact on lesson times. The ten minutes which accounts for moving around the sites of the school were extracted from lesson time (time for some lessons were reduced). One of the deputy headteacher's comments in this category:

> To be honest, we allow time for our students for moving around the school. We have some lesson times reduced as a result."
>
> (During informal talking.)

Another seemingly observed event in connection with the split-site of the school was that pupils forget to bring some required materials to class. One of the secondary school pupils said to her teacher:

"I left it on the other site of the school main building."

The fact that this problem was associated with split-site suggests that it is relevant. In addition, the most common forgotten items observed were books, homework and pencils. The striking issue as regards the forgotten items-the other site of the school was that a pupil has to walk our of the classroom and the site to retrieve the forgotten item(s). However, on this particular issue, some of the teachers observed were prepared to handle this problem within the ten minutes set specifically for moving around, i.e. on arrival to the other site of school, it was noted, some of the teachers stood by the door of their classroom, thereby when a pupil approached the classroom without books or other required materials such as home work, the pupils were stopped by the door with instructions to get the required materials ready. Most of the pupils observed who had this problem responded in the following phrases:

1. "I'll be late and have to go to the deputy's office and will receive a detention."
2. "Please teacher, I can borrow some from my friends."

This information was recorded during the observation. Such expressions by the pupils suggests to me that this may not be the case in a school in a single site. Much the same problem can be of the rain water and cold winter as the sites are not connected with covered ways: this became clear in the pupils' complaints at the time of the observation as the students walked from the main building (where all the offices are) to the Fine Art/dining hall building. One of the pupils I observed said:

"I'm finished; its too cold to go out."

Another pupil observed said:

"I find it difficult to write; my hands are frozen. Is it not cold for you?"

Again, another student observed:

> "I should wait for my dinner time here. It is too cold to go to the main building, er, and come back here."

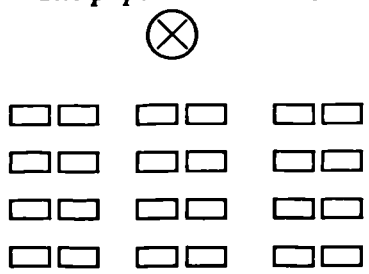
Note Behaviour observed: from these above comments observed the behaviour which could be associated with the split-site of school are:
1) complaint behaviour;
2) time watching;
3) lateness;
4) failing to write (hands cold);
5) forgetting to bring required materials to a given class.

It should be noted that the information recorded of the observation are summarised in note form like the above all through in the presentation.

Classroom seating

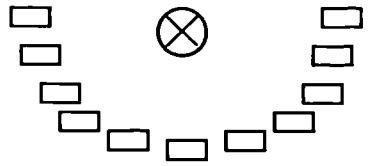
Recording observation of the classroom settings in the school, it was noted that the classroom environment consisted of inconsistently many material factors and behaviour. There were differences between classrooms in terms of their physical set up. In terms of seating arrangements, it was noted in some classrooms pupils were seated in a row; in some pupils were seated in groups; in other classrooms pupils were seated in a circle; also in other classrooms pupils were seated in a semi-circle and furthermore, in other classrooms, pupils worked separately. Sometimes there were two teachers noted, also teaching in the same classroom at the same time (supervision pupils' Fine Art work). The diagram below illustrates the general picture of classroom seating arrangement differences as was observed:

The pupils seated in rows



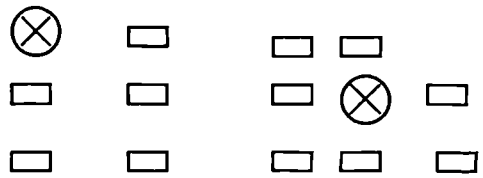
(no pupil-pupil talking allowed)
(This was frequent in history and geography classrooms.)

The pupils seated in a semi-circle



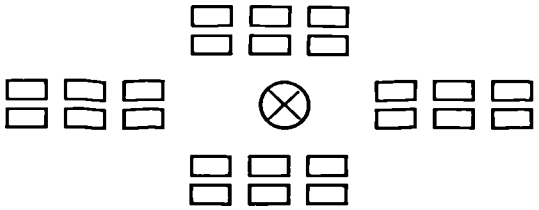
(pupils talk directly to the teacher)
(This was frequent in drama lessons.)

The pupils seated in separation



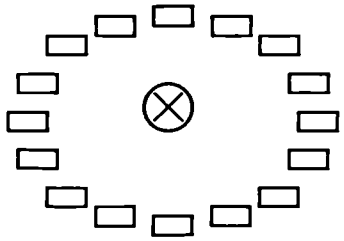
(this particular issue - pupils seated in separation, was noted in Fine Art classrooms and detention rooms. In this arrangement, pupils were free to move around or talk to each other)

The pupils seated in groups



(this arrangement allows for pupils talking to each other)
(This was freqent in maths lassroom.)

The pupils seated in a circle



(pupils talk to the teacher. But there were times when pupils talk to each other, particularly those at the back of the teacher)

Key

1) Teachers 

2) Pupils 

These seating arrangements not only show the way different subjects were taught but also the way pupils behaved in different classrooms. It was noted in some classrooms (particularly the fine art classroom) that pupils move quite freely around, while in other classrooms movement was restricted. A similar case was observed about talking: in group seating talking was allowed, but in turn; while seated in a row, talking was a disruptive thing and restricted.

Another striking point noted in connection to classroom differences was that the pupils of lower classes and higher classes were taught together in the same classroom: this was noted in the fine art classroom where year 10 pupils and sixth form worked together, at the time, while in other classrooms this was not the case. This information was not detected during my visit to the other schools in Sample 1, perhaps because it was a questionnaire study.

Concerning classroom size, there were three kinds of classroom size issues: 1) small classroom area; 2) large classroom area; and 3) number of pupils. What struck me was that small classrooms were catering for more pupils than they were designed to hold (30, 35-40 pupils). As a result, there were certain associated difficulties noted and these were: (1) it was not easy in the large class size (in terms of number of pupils) to get every pupils' attention, and 2) keep the pupils engaged in learning activities – when the teacher is teaching, some of the pupils were noted talking to each other. The size of the classroom area was not the most difficult problem for the teacher, rather it was the number of pupils in a class that was a matter of concern. For example, a smaller classroom with a smaller number of pupils tended to have no behavioural problems. There were no difficulties in classes of 10 pupils (this was noted in most of the science laboratories), at the time, and yet the rooms were quite small in size.

Note: Behaviour definition:

1) Unauthorised laughing and talking in larger classes.

2) Lack of attention.

3) Less apathy in smaller classes.

4) Less frustration in smaller classes.

5) Confusion as a result of different classroom arrangements.

Unauthorised items

The use of unauthorised items was observed in the classrooms. Some of the physical things which the pupils interact with were not brought in the school and were not school-related materials either. They are things which the pupils bring to the school. The most commonly unauthorised items noted the pupils had brought were lipstick, chewing gum, Walkman music systems and whistles. Even during administration of the pupils'

questionnaire (study 1) I noted water pistols in the hands of some of the pupils. It was noted these unauthorised items have relationships with the pupils' behaviour – such behaviour was often attention seeking; the items were noted luring some of the pupils' attention. This was noted when one of the teachers (at the time) tried to prevent the entry of the undesirable items into her classroom:

> "Always remember the first time you get to school – take any item not related to classroom learning and other unnecessary items – leave them where you keep the rest of your belongings."

It was also noted that some of the pupils used unauthorised items in the lesson time and as evidence, there was a student who used lipstick when teaching was in progress. Another event was noted, that was one of the teachers warning a pupil about gum chewing in the class:

> "You can either get that gum out of your mouth or get out of the class for the rest of the lesson."

In fact, although the pupil removed the gum, the whole issue disrupted the lesson and deserted part of the lesson time. The trouble noted with regard to gum chewing was that some of the teachers did not like it, while other teachers were not bothered. In an informal talk, I asked one of the teachers (in whose class I had observed some pupils chewing gum and in fact she did not intervene) "what is your opinion about pupils chewing gum in class?". She said:

> "How long have you been in this country? Don't you know educators throughout this country cannot agree on the effect of gum chewing on the teaching process. But I just don't think so."

Furthermore, it was noted that chewing gum ended up in toilets, on carpeted floors, in corridors and on the pupils' desks, and as a visitor I felt it was very disturbing to see.

Note: Behaviour definition:

1) disruptive stubbornness;

2) refusing to pay attention;

3) doing own things while teaching is going on;

4) eating in class;

5) lesson disrupting;

6) Disruption of other pupils' attention.

The display of pupils' work

Recording information on display of the pupils' work. There was a massive display of the pupils' work at the time. In almost every classroom there were displays. There were also several other display boards placed outside the classrooms and all were fully used.

Note: Behaviour definition:- Nil

1) It was difficult to observe exactly what behaviour of the pupils were related to display.

2) Perhaps the fact that there was a massive display of the pupils' work suggests that the pupils work hard for display.

3) Also, the fact that the displays were not damaged, at the time, suggests that display can help reduce the damaging behaviour.

4) It should be noted at this point, as observed during the administration of the pupils' questionnaires, that pupils showing interest in looking at the display (by "interest" is meant the drive to focus attention and assist in the learning activities - display seems to create interest in the pupils to work hard).

The school uniform

It was possible to make observations based upon pupils' behaviour in relation to uniform. The observation during the two weeks at the school entry, in different classrooms, movement between lessons and movement during break times showed the pupils' acceptance of the membership of the school's community in terms of uniform wearing. In other words, no single pupil was found or noted wearing something different at the time. To make one reservation about this finding, since the observed sample subjects were all girls, perhaps it is to be assumed that they felt strongly over their appearance and this claim can be cited in Baron and Graziano (1991). Nevertheless, bearing in mind wearing school uniform as "good behaviour", this finding can serve to indicate that monitoring the formal school needs, like how this particular school observes its uniform rules, it could be one of the valid starting points to use in teaching the school perceived "good behaviour" and to keep by the philosophy of the formal secondary school education.

Note: Behaviour definitions:

1) Identifying with the school in terms of uniform wearing.

2) Obeying the school uniform wearing rule.

The storage issue

Recording observation of storage in the school. There were problems noted of storage at the time: i) storages were inadequate for all the pupils; ii) the few lockers the school had were mainly used by upper classes (form 5 and 6); and iii) the rest of the pupils kept their personal belongings in classrooms, TV/Video rooms, and drama rooms.

Note: Behaviour definitions: Nil.

No behaviour of pupils was noted in relation to lack of storage, but the fact that those rooms in which the pupils kept their belongings were in the main the ones closer to the staff rooms and the school's offices suggests that there may be some reasons behind it. This bit was not observable. Also, it can be argued that lack of storage may make the school look untidy. It might lead to things getting lost.

The corridors and stairs

Recording information on the corridors and stairs. There were both narrow and wide corridors in the school. Corridors in the school's old building were mostly narrow. All stairs in the school were narrow and in fact some stairs were steep. Most of the corridors and stair areas were carpeted. The corridors and stairs which lead to science laboratories were not carpeted.

Note: Behaviour definition: Nil.

No behaviour of pupils was noted, at the time, as resulting from the corridor or stair conditions. Maybe, because one person could not see everything, everywhere, at the same time.

The teaching and learning materials

There was evidence of a direct relationship between teaching/learning material needs and behaviour of the pupils. Wandering in the classroom during lessons was noted. Most commonly pupils were noted moving around to sharpen a pencil, borrow something, get a book from the shelf, throw paper/chewing gum in the waste basket, and some moved to share a book/instrument in laboratory/a map with other(s). Interestingly some of these

wanderings such as moving round to throw paper in the waste basket or share something were rewarded by the teachers. As one of the teachers said:

"Good example."

Other movements or wanderings in the classroom, such as to sharpen a pencil or borrow something were reprimanded. As a teacher in this particular situation said:

"Where to? Don't do that. What are you searching for?"

The pupil in the situation replied:

"I move towards thing."

Thus, it appears teaching/learning materials have a role to play in the behaviour stability in the secondary school classrooms.

Note: Behaviour definition:

1) Problems of settling properly to face the teacher (facing different directions).
2) Stubbornness.
3) Disagreeing with a teacher.
4) Wandering around the classroom.
5) Refusing to pay attention.
6) Disruption of other pupils' attention.
7) Sharing with others.
8) Anti-littering.

The furniture settings

Recording observation concerning the furniture-pupil behaviour relationship. Furniture conditions: there were no adjustable desks or chairs in the classrooms observed, at the time. All furniture conditions were the same for all the pupils, though the pupils' heights were dissimilar: i.e. some pupils were tall, some average and others short. Therefore, it was noted that the tall pupils either did not sit appropriately and some of the tall pupils had to "wear" desks on their knees. For the shorter pupils, some were noted using their own bags or big books placed on the chairs to sit on. A point of interest noted was that when a desk or chair was moved by a pupil in this kind of situation, the observer heard:

"What is going on?"

(asked by a teacher)

During the time of observation in the history classroom, one of the pupils stood up unauthorised. The class was confused at the time and the teacher concerned asked:

"What?"

The student replied:

"Its my legs giving me trouble. I think its the desk – too low for me."

In the observed classrooms, no pupil was asked by the teachers to arrange the desks or chairs. All furniture was arranged by the teacher or a school staff member. Everything was arranged before the class started, so I did not observe how easy it was to move the furniture around the classroom.

Note: Behaviour definition:

1) lesson disruption;

2) attention disruption;

3) damage to personal belongings;

4) refusing to sit down;

5) standing up unauthorised;

6) stubbornness.

The toilet areas

There were two characteristics of the school's toilets: 1) there were the toilets in the old school building which had graffiti and litter and no looking mirror; 2) the toilets in the new building were clean and had an absence of litter and graffiti. Observations in the toilets in the old school building was at break time (I closed myself in two minutes before the break time as I did not want the pupils to note my presence there) for two days (20 minutes each day) and I noted only one student who 'came' to use the toilet, while at the time I was taken around the school (by one of the teachers) I noted a long queue to use the toilets in the new building. As I attempted to ask, informally, the staff member who took me, "What is the queue for?", she replied:

> "We do have quite sufficient toilets both in the old site and new. But most of our girls prefer using the ones in the new buildings. I believe its a quality problem and the toilets in the new buildings have nice wash hand basins, looking mirrors and warm/all the time clean."

At another time, one of the deputy headteachers asked me:

> "Onesimus, if you want to visit the 'gentlemen's' place, the ones at the sixth form block are better. It is one of the areas that has been improved in our school, which you might find interesting to see."

The interesting point to note of these comments is that it seems to suggest that appearance (attraction) of setting can be accepted or rejected. In addition, maybe because both the old buildings and the new buildings were decorated (painted) using the same colour, no judgment of any kind was noted.

At this point the reader is reminded that this is data presentation and details/links with literature will come later.

Note: Behaviour definition:
1) littering;
2) graffiti;
3) avoiding the use of an unclean area of school;
4) acceptance of using the only clean areas of the school.

Graffiti

Observation of presence of graffiti: Despite the cleanliness and tidiness of most parts of the school, and despite the majority of teachers at the school (in my informal talks with them) perceiving that the environment in their school was generally positive, graffiti were noted in some of the toilets and on some desks. There was no sign of graffiti on walls. In all the places where there were graffiti, it was considerable, and the writing was in many different hands. It could be argued that graffiti increases in places where graffiti remains uncleaned for a long time. It was noted that some of the teachers cleaned desks or asked their pupils to leave desks clean at the end of the lessons (the cleaning of desks at the end of the lesson was common in fine art classes). Also, there was more graffiti on desks with bare wooden tops than desks with formica tops, perhaps because desks with formica tops were easier to clean compared to the bare wooden topped ones. The teachers were aware of the difference of between wooden desk tops and formica desk tops:

"I don't really know the reason which prefers bare wooden desk tops to formica tops. Formica desk top lids have been useful, particularly to us in the Fine Art Department. It is much easier to put off the acts of graffiti in classrooms."

In addition, it was noted, as was the case with littering, that the difficulty lies in identifying the graffiti writers at the point or time when the actions are taken. It may be that finding out who writes graffiti, in a way, may be an effective approach to decreasing graffiti behaviour, but this was beyond the scope of this study.

Note: Behaviour definition:

1) graffiti behaviour (behaviour inferred);

2) anti-graffiti.

Littering

There was litter in some toilets, at every corridor and stairs. Most of the time the staff members who took the researcher around the school abstained from removing litter in corridors and stairs. On the other side, it was observed that the presence of the litter bins were used. Areas such as classrooms observed had a relatively high number of litter bins and had an absence of litter. No pupils were seen dropping litter where there was the presence of school teacher/staff. It seems that the pupils who litter do also observes the teachers or authority governors before dropping litter.

Note: Behaviour definition:

1) Continuing littering;

2) anti-littering.

Conditions for play

There was no school playground, nor a sports hall, swimming pool or gymnasium hall. A few of the pupils visit the city playing field by bus and some limited play facilities

found were insufficient for all who wish to play. As an outcome of these conditions, the conduct between the pupils and teachers and the pupil-pupil were quite different at times. The pupils who board the bus to the playing field had lots of smiles on their faces and talk pleasantly to their teachers. The pupils who did not get a chance to go on a bus harshly seek to be allowed to go on the bus:

> "I used to do a lot of sports, but now I don't do it any more. I would rather go and watch and not take part."
>
> "It's not right to forget the fact that we're all entitled to play."

Some of the pupils who did not get the chance to go for play were noted yelling to their friends:

> "Just go, its alright. Go-go-go."

It appears that play needs can seriously damage the relationship between teachers and pupils, and pupil-pupil relations.

Note: Behaviour definition:
1) bullying others;
2) talking when the teacher is talking;
3) refusing to obey the teacher.

Factors absent

The following factors, although were widely perceived as critical and interfering with the pupils' lives as by the literature (see chapter 6) and the respondents of study 1, tended not to exist in the sample school of study 2.

- Noise: The school is located distant from heavy noisy traffic ways. Within the school, most of the rooms and corridors are carpeted which controlled noise levels. Also, the teachers supervised their pupils in almost every area of the school. Thus, not one of the pupils was found or noted as seriously making noises at the time.

- Lighting: No single pupils complained of lighting at the time.
- Heating: During the time of the observation, heating conditions were normal – no student complained.
- Windows: There were no broken windows at the school at the time.
- Teaching in the dining hall: There was no teaching in the dining hall nor assembly hall at the time.

However, comparing the analysis of observation of study two with the results of study 1 suggests that the physical environment conditions are different in different schools.

Note: Behaviour definition:

It could have been because of these conditions that "super, very supportive environment" and "the students less disruptive" were attached to the school by particular members of staff (these were said during my informal talking with the teachers).

The researcher's presence in the classrooms

As a researcher, I was also observing my presence and all that it implies about relations with the pupils, teachers and the nature of the classroom. I noted that in some ways the teachers saw me as someone who could effectively deal with their perceived disruptive pupils. During the observations in different classrooms, I was asked by the teachers to walk around the classroom to reach to the individual pupils, and in particular "try to have a word of encouragement with the perceived 'disruptive' pupils" and "tell them to work hard and co-operate with the teachers." I did so. I moved around the classroom as this gave me the chance to note some evidence of how the pupils behave in relation to different characteristics of the physical school environment factors. At the time I moved around the classroom of each subject, there was no unnecessary or unauthorised talking. All the

pupils were quiet and appeared to concentrate on work. Interestingly, also, some of the perceived disruptive pupils, with permission from their class teacher, had to follow me (within the class) to show the work they did – "this is what I have been doing". I noted that the pupils worked hard when they received my attention. The staff and pupils here appear to welcome visitors in areas of "discipline" (behaviour), as one of the teachers commented:

> "We're all fighting for survival in what has definitely become a very hostile environment. Schools are a complex place. I have been teaching for 26 years. We need some kind of help from outside like this to view our pupils and particularly for the difficult ones. I think its effective in helping kids – almost essential to facilitate learning."

Although the finding is gratifying, more importantly, the pupils/teachers and I found that we were reacting to each other in a more personal way – putting the surrounding (day to day) forces of relationship in the school aside. The observer undoubtedly had some influence on this particular situation and finding, of visitors to provide effective behaviour management in the school environment. It is the quality of environment that exists in the school, as has been shown elsewhere in this analysis, all the schools or classrooms within a school are not similar.

Note: Behaviour definition:

1) pupils having worked;

2) acting as attention to work;

3) being free from disturbance.

Interview Data

Table 26: The noted pupils' positive or negative reaction to the physical school environment factors – the pupils' own responses.

No.	The physical school environment factors	How it affected pupils' behaviour – pupils' own estimate of their position			
		Pupil 1	Pupil 2	Pupil 3	Pupil 4
1.	The split-site of school	"Oh, er, I see what you mean – I don't like separate-site of the school. We, sort of, cope with it."	"No problem."	"No, I don't like the split-site. You, sort of, keep walking up and down. It makes it better when it is a small and single site because you feel like you're more at home. But, we sort of put the value of academic work before the possible unpleasant consequences of the school's environment."	"Er ... yeah I don't quite like it – but there's nothing you can do about it."
2.	The noisy school areas	"Usually in here – just occasionally when, er, if a teacher is not *in* the lesson, and pupils are left to get on with work and they have got to get something else, then the noise rises, but it is quickly put down. They do not normally rise up too much."	"Er ... we tend to get no noise outside .... er .... so that is no problem."	"No – we don't have noise."	"Noise – er .... well, that people going to lessons are talking – just generalising – people moving in lessons. Oh, er, you always get some people chatting in the lesson; big classes like 28 or 30, you're likely going to get some kind of noise. I don't mind too much about them – now I am in the sixth form which is much better – class of 2 or 3. It's more individual."
3.	The old state of school buildings	"Er ... we had the synagogue as the school dining hall. I did not quite like that. Now it is all renovated – we don't have to worry again."	"I think it is finished – that is fine – you cannot do much about it."	"No, I don't know."	"Well, I suppose if buildings are old you tend to worry about them – but you can't do much about them."
4.	Graffiti – incorrect spelling.	"We have had *once* serious graffiti and the face and it says: 'strike again'. And you can go into every classroom and sooner or later there will be 'strike again' on one of the desks in the room. So it is a continuation. Some graffiti gives opinions, sort of, like I remember one of the classrooms had a Marxist story. You laugh at them .... Yeah .... No .... It does portray opinion and you sort of do what you like to it."	"I wouldn't do anything to it."	"If I *see* graffiti – just leave it or tell someone: 'My table has graffiti'."	"I don't know."

No.	The physical school environment factors	How it affected pupils' behaviour – pupils' own estimate of their position			
		Pupil 1	Pupil 2	Pupil 3	Pupil 4
5.	Too warm classroom	"We haven't had one too warm. It's often cold in some classrooms. But, when its cold you sort of complain: 'It's freezing. I cannot work in this temperature." Put more jackets on but uniform is quite strict. Yeah, heating in the main building has improved quite recently."	"It's quite often cold instead. Sometimes its too cold. When its cold, you sort of sit back to the radiator."	"It's often cold and it is a bit disruptive. You have to disrupt from work if it is cold because you're more bothered about keeping warm than doing your work."	"Oh no. We have never had too warm classrooms. If there was, I suppose, I would ask if the window could be open."
6.	The narrow space in corridor	"No-one has an interest in them. Not much the school can do about it."	"No. I haven't had a problem in the corridors."	"Its fine, yeah. Its fine. I'm not bothered about them."	"There's not a lot you can do about that."
7.	The overcrowding in the classroom	"I don't really like crowded classrooms. You get organised with friends, and have to put through complaints. Its difficult, you know, you sort of try to get things done, get organised to spread out your papers."	"I don't know. Although I hate crowding."	"Nothing. I just dismiss it."	"I don't like crowding. There is not a lot you can do about it. Now I am in the sixth form, there is much more space. You sort of put up with it. You cannot do anything about it."
8.	Carpeted rooms	"Yes, I think ... er ... it is a friendly atmosphere and warmer."	"I don't know. I quite like them. It makes you feel much warmer."	"When we use these classrooms it didn't have carpet anyway. They're quite new. It was a bit messy and scratchy."	"Oh I like carpets. I don't know why I like it. Its there so it makes the room warmer."
9.	The unclean toilet	"I don't like some of the toilets. They don't clean them very well. I usually go to the good ones. The ones in the sixth form are better than the main building ones."	"Oh I like clean toilets. I like good environment and complete one. Sometimes, for example, there are dirty toilets down there. I don't like to use them."	"Some of our toilets are not particularly good, so I go to the nicest ones."	"I don't like the toilets in the main building. They're not particularly clean like the ones at home. Nothing you can do about it. I just don't use them."
10.	Pleasant display of pupils' work	"Yes, it is very encouraging from a pupils' point of view. Last year I had my Art displayed and everyone passing through standing and saying 'Look at that. Isn't it nice'. You say, 'Oh, they're looking at my work'. I get happy and encouraged."	"I quite like the display too. You feel proud and encouraged if your work is displayed."	"Yeah, I think its good to put student work up. I think it makes a student feel better. They feel that their work is, sort of, a good example."	"It aids learning. You feel, sort of, that other people are looking at your work."

No.	The physical school environment factors	How it affected pupils' behaviour – pupils' own estimate of their position			
		Pupil 1	Pupil 2	Pupil 3	Pupil 4
11.	Teaching in dining hall.	"Yes. We used to have lessons in the dining hall. I hate that. You smell the Domestos and if you look on the table somebody, like, has smeared dinner all over this table. It was just for Art. 'Oh, er, its all greasy, sticky or something.' You don't listed to the teacher, you know. This new Art complex has been much better."	"Sometimes we have our exams in the dining hall. But we don't use it much and it is a separate building. We don't often go for lessons up there."	"If they don't clean it very well, I don't like it. Anyway, we don't go for Art lessons there now."	"No, I don't remember."
12.	The adequate lighting	"Its a good thing to have adequate lighting. But I don't know why I like it."	"I don't know."	"I think its a good environment for working."	"Lighting? Its usually fine."
13.	Uncomfortable furniture fittings (chairs and tables)	"We have sixth form block and main block and many of the desks in the main building have had graffiti on them. So sometimes, during lessons, you seem, sort of, tend to look at them when you are working and ask yourself is going to be in the whole school. You turn to laugh at them, or you turn for a laugh with your friends. That's why I don't quite like some of those desks."	"Now in the sixth form we don't have the opening desks. We have just, er, sort of, flat desks. In the sixth form we have lockers instead of in desks. I don't know whether that's better. In a way, I think so."	"I don't like some of the desks we have. When you have the open desks and you kept your stuff in that desk, it meant you have to sit at that desk and you couldn't move to another desk and sit with someone else. When you have a locker it means you can move and sit with friends or you have different friends."	"I did not do anything to them. It bothered me a lot. Now I am in the sixth form things are much better."
14.	Sharing materials with other pupils during lessons	"Oh, the books: sometimes they get a bit dog-eared and muggy. People have written on them and have graffiti on them. Er ... I don't like them. You know, you have to tell the teacher: 'I want a new book – get a new book.' And, when at the beginning of the year, when they pass out the books, everyone dives for new ones. So, you know, nobody likes the horrible ones, but a lot of books used are out of print, so people are forced to use them."	"We all have our own text books, er, mostly. But if we're given out text books in a lesson just to use for one lesson, we might share them. That is not usually a problem."	"Er .... sometimes .... Mainly we have got our own – each has got a text book. If you do share you tend to chat with the person next to you rather than listen to the teacher. So!"	"In sharing a text book, I sort of, push it more to my side. I did not quite like the idea – but there's nothing you could do about it."

No.	The physical school environment factors	How it affected pupils' behaviour – pupils' own estimate of their position			
		Pupil 1	Pupil 2	Pupil 3	Pupil 4
15.	Insufficient resource materials for subjects.	"I think it aids learning difficulties. Well, its a difficult matter. I don't know."	"We usually have everything."	"We have got everything we need."	"Find a friend to share with."
16.	The unattractive decoration	"I like it, but I don't know. I think you enjoy school activities and come to school willingly when the environment is, sort of, looks nice."	"No. I don't know."	"You can bring your parents to see the school."	"Yes. Once again, good decoration makes a friendly environment and if you're encouraged by the environment you can learn a lot. I don't know. I think it is a nice thing."
17.	Inadequate litter bins	"I don't like litter. I don't like a mess. If I have litter, I keep it till I find a bin."	"If there are not enough bins, I put it in my pocket. I often have, sort of, rubbish in my pocket."	"I suppose it would end up in a bag or put it in the desks."	"Find myself a bin, if I had litter."
18.	The inadequate lighting	"I don't know. I think its disruptive to have inadequate lighting, particularly in classrooms."	"Mainly we have adequate lighting rather than darkness."	"I don't know."	"There is not a lot I can say about a good lighting system. Good lighting – good work. You cannot work in darkness."
19.	Comfortable furniture fittings	"I don't know. I think it is a good thing for working."	"I am not sure of the answer. But I like a supportive and safe environment."	"I don't know."	"I don't know."
20.	The clean toilets.	"Er .... I have already said I like a good environment. I like to use clean toilets. Its sort of hygiene."	"I think the clean toilet is one of the most important ways the school can care for us. I like clean toilets because I come from a clean family."	"I just think all school toilets have to be clean. Clean environment includes clean toilets."	"The clean toilets go without question. Smelling toilets are just horrible."

Next comes the set of results obtained from the respondent teachers.

Table 27: The noted pupils' positive or negative reaction to the physical school environment factors – the teachers' responses.

No.	The physical school environment factors	How it affected pupils' behaviour as defined by the teachers	
		Teacher 1	Teacher 2
1.	The split-site of school	"No .... er ... I have not yet noticed one. But I think without help from teachers, perhaps pupils would, sort of, slow down a bit and be late for class. We have sort of strict rules for lateness in class. All the staff observe this rule. So, we tend to get on well with this problem."	"In this school I haven't noticed a pupil's behaviour as because of the split-site of the school. We realise that our pupils are faced with the problem of long walking between the buildings and we have given them time for that. But we are wrong if we say that they like it. Here, in this school, we are trying to face the problem by taking them, walking alongside them. I can only base my report on the ten years experience in state schools. Some pupils moved late for class and slow to settle."
2.	The noisy school area	"Noise? Noise problem – I have never seen here. The noise level in this school is pretty good. I would have thought that it makes pupils shout. But I think in this school we do have, er, exceptionally well behaved groups of girls who are quite highly motivated anyway. So I don't think that it, in some way, would make a great deal of difference. I think the one area I could speak with a bit of, sort of, detail – in the English Department we used to teach all our lessons in classrooms like this. But, if you try to do drama in a normal classroom, you do make a lot of noise and that would disturb other people. So drama was very very bad. Now its isolated, we have, sort of, a new large hall for it."	"I can honestly say we don't have a noise problem. It could make them, perhaps, shout or pay no attention."
3.	The old state of school buildings	"I can't remember what they would do about it. But I do understand they, sort of, have negative feelings about it."	"Depressing. Pupils like an attractive and friendly environment. But in this school is interpreted in terms of effective teaching. We prepare our pupils for Oxford and Cambridge. There is a feeling in our pupils that they don't want to miss this opportunity. They do entrance exams anyway. So, age of the building does not affect their behaviour so completely as to walk out of the school. They are still in the school. We also honestly accept their complaints – and they are at liberty to speak freely to their teachers about unpleasant situations. From there we find no difficulty in taking steps to improve the situation."
4.	Graffiti – incorrect spelling	"Graffiti? Oh you could find quite a few around. The only thing is we don't know pupils' reactions to it."	"To be honest, I don't know. A major difficulty is you don't know who engages in graffiti. However if you're really looking for some evidence of behaviour – some pupils want to remove graffiti if it refers to them and others would make it worse."
5.	Too warm classroom	"Again, I cannot remember that ever happening here. I mean, oh it has never been too warm. Sometimes, rather, cold and this makes it difficult to get pupils to enjoy the lesson. But these classrooms are always heated. It could be very uncomfortable for everyone really."	"I don't know."
6.	Too narrow space in the corridor	"Its fine really, because we only have everybody in the corridor when changing lessons. Its not a problem. But we have got to watch some of the students well."	"Causes congestion. But it all depends on time given for movement as we have suggested."

No.	The physical school environment factors	How it affected pupils' behaviour as defined by the teachers	
		Teacher 1	Teacher 2
7.	Overcrowding in the classroom	"Er .... I think it causes restlessness among pupils – inability to pay full attention."	"Untidiness. Sometimes when we get a whole year group up here – 40 pupils in a classroom and it is quite crowded. But that's only once a week, when we do technology in that classroom. I then feel that if the girls were no so well behaved as they are, with discipline problems, it wouldn't be easy to run. Yes, because I have been in the state system for 10 years and I have been in rougher schools. I think it is up to the teacher to see that pupils are controlled and not allowed to do things in their own way. And, you know, we ladies are good teachers."
8.	Carpeted rooms	"We all like carpets. Its difficult to know what behaviour to say it would influence. If feels nicer, full of life, it gives the room a warmer feeling. I think it helps from a noise point of view – we don't, sort of, get noise when moving desks. I think it feels nicer."	"Although it does help to reduce noise level and students quite like it – because it makes a warm environment. I don't think I have come across behaviour that links with it."
9.	The unclean toilet	"I don't know to be quite honest. I have not come across one unclean toilet-behaviour issue."	"Pupils evade from using it."
10.	Pleasant display of pupils' work	"Oh display? Pupils like it. They don't sort of, spoil it. They enjoy working for displays, and I think that, you know, the fact that they put so much work into it suggests that they see it as worthwhile and enjoy seeing their work displayed."	"Children enjoy seeing their work on display and work hard as a result. It gives them enormous pride in their work. We have open evenings for parents where they come and have a glass of wine, and look at all the work, and we do it like a professional gallery. The girls are enormously proud of what they have done. They feel happy. We do great projects. What we do here took me all over the country. I went to a lot of schools.
11.	Teaching in dining hall	"I can't remember that ever happened with me ... er ... I can't remember, so I don't know what pupils do."	"Children don't like teaching in dining hall. They, sort of, become uncertain what to do. But from a behaviour point of view, I don't know what they do about it. We used to have some lessons in the dining hall. We have improved now."
12.	The adequate lighting	Er ... I think children all enjoy working in, sort of, the adequate lighting. But the outcome may necessarily not be in behaviour."	"I don't know any particular behaviour related to it."
13.	Uncomfortable furniture *fitting* (chairs and tables)	"I think you should ask this from the pupils to be honest. I think they're so used to sitting behind desks and having their own desk to work out – to having enough elbow room. That, I don't think, that I have come across a problem."	"Children tend to be quite rough with them – it doesn't matter if they break, and they can be damaged by graffiti."
14.	Sharing material with other pupils during lessons	"This, I can only speak for the English department here, for example, they have a lot of books to bring to different lessons. Er ... very occasionally we might be a couple of copies 'short', so a few pupils have to share. But the vast majority have their own copy of each text that we're working on. They're quite happy to share with friends. In fact, it leads to sharing positively, helping each other."	"I don't really know. But if they are as many as 40 above, they have to share other things."
15.	Insufficient resource materials for subjects	"Again, er, it depends on pupils – many will share – some of them, of course, may find it impossible so greedy. But we do not, sort of, allow this to go on and on."	"It tends to weaken interesting lessons – and in this case pupils may have to share. The Fine Art Department doesn't have this problem."

No.	The physical school environment factors	How it affected pupils' behaviour as defined by the teachers	
		Teacher 1	Teacher 2
16.	The unattractive decoration	"Children feel unhappy about it, but I have no knowledge of the behavioural side of it."	"Although our girls don't like unattractive environment – they sort of put up with it. If they cannot stand the situation they report to their teachers."
17.	Inadequate litter bins	"Oh, I think it would have been horrible without bins. Here we do a lot of bits of work which you may not be able to find in other schools. We do make sure that they have enough bins. Oh, even still, sometimes pupils throw litter around."	"Children are very messy. They wouldn't behave well, I don't think. They would just throw anything anywhere because they have a tendency to do that – anyway children are not particularly tidy. No, I think, it is, partly your teaching organisation to actually know that they are coming to you for an hour and ten minutes, and you know that the other group is coming at the end of that, so it is just a part of your organisation skills. To include a totally finished episode – a chapter if you like. And I see it that way – and I run around. We are so good at it. We *are* such good cleaning ladies – I could clean someone's house and be very friendly. Then, five minutes before the end of the lesson we also give them the task of cleaning the tops of the tables – they pack their bags. If you're not a good teacher it is a problem."
18.	The inadequate lighting	"We have always been able to put these lights on, so I haven't come across behaviour problems with lighting. But an obvious case is that they don't read the book, look at what is on the board, anything like that."	"Poorly presented work, moves around, not seeing board."
19.	Comfortable furniture fittings	"Er ... children tend to look after it, especially if they are new."	"Place comfortable for work – aids work of better standard. Children tend to look after them. It remains graffiti free for much longer."
20.	The clean toilets	"Again, I don't know. I think you should be asking pupils. But it may be that they made them worse and left litter."	"Our pupils quite like clean toilets, perhaps because they are girls."

The interview study considered a minimum of seven years experience of the respondents in the school so as to get valid data. The headteacher assisted in selection of the subjects. This was to examine whether or not pupils had reacted to the physical school environment characteristics (conditions) in past years. As details already presented in chapter 8, interviews were also used (as Uhrragg, undated, suggests) to ask supplementary questions and to allow respondents to express themselves at some length. The sample consisted of six interviewees: 4 pupils of sixth form and 2 teachers. 20 target features (factors) of the physical school environment were selected (see Chapter 2 for working definition). The criteria for selection of these factors were (it should be noted that all the methods studied the same things):

1) Frequency of mention in the HMI (1988-1991) reports.

2) Nature of the schools in the study one sample reports (as of data set 1).

3) The pupils' ranking exercise in the third/fourth/sixth questions of the questionnaire of the first study.

All interviews lasted for twenty minutes, except one which lasted only ten minutes because the interviewee reported ten minutes late. The types of the attitudes/behaviour which the respondents offered, in terms of the twenty features are presented in Table 26 (of the pupils) and Table 27 (of the teachers) above. The discussion here mainly are some comments on the questions which were asked at the time. It may also be mentioned at this point that the strong agreement between the findings of the HMI (1988- 1991), the questionnaire data set 1 and observation data in terms of the physical school environment conditions continued in the interview results. There is also considerable agreement between the findings of the questionnaire and interview results in terms of the pupils' attitudes towards the physical environment of the school. Another agreement is between findings of the observation and interview results in terms of whether or not the physical environment of the school has any relationship with pupils' behaviour.

I asked about the nature of the relationship, if any, between "dislike of school-pupils behaviour". This question caused difficulty to the respondents, however at least one student commented:

> "I know some people who don't like school. They come to school because their parents force them. Some of them come because they have friends here. For example, I don't hate uniform but I still have to wear uniform all day because of the school rules. They are strict."

It seems, in terms of this comment, parents' pressure can help promote perceived 'good behaviour' of pupils. Such influences were considered in chapter 3 of this study and more will be said about it later in this study. Furthermore, the comment appears to suggest that school rules regarding pupils' behaviour should be reinforced with help from parents. It seems pupils whose parents support the school rules and/or teachers' authority, reinforce pupils' behaviour which is perceived by the school as "good".

On the question of whether or not a respondent would accept doing a project on the relationship between the physical school environment and behaviour of pupils. The respondents welcome the idea (expressed support).

> "I think it's a good thing for expressing your feelings about more specialist subjects."
>
> (Pupil 1)

> "Yeah, certainly, because, I think, the school environment should be a tool which helps you to work."
>
> (Pupil 2)

> "From the pupils' point of view, I think of the school environment, er, as a reflection of hygiene."
>
> (Pupil 3)

> "Er .... the school environment must satisfy demands of teaching and learning requirements and care for the students' lives. This is great! I cannot remember my students getting such variety."
>
> (One of the respondent teachers)

I followed up these remarks because I had copies of pages in which to write some of the information. I also asked the question: "If you had the chance to design your school, what features would it have to improve the behaviour of pupils?" Aside from the term pupil/teacher feelings or constrains as can seem to be, the comments do not only argue for the missing required physical school environment 'feature' but also reflect on lack of co-operation between the designers and users. It also provides some important evidence of pupil/teacher inclusion, by way of suggestion, in the debate on gaining knowledge of the school settings or situation. The comments given went something like this:

> "I think the one thing I would like is a sports field. It's quite a long way to go."
>
> (Pupil 1)

> "I would want the dining hall to be in school and not off the road."
>
> (Pupil 2)

> "You talk about lessons in the dining room. Well, that is what we had before we had the synagogue. When we, er, were in the main building it was really crowded, and it was horrible. You didn't like to do the work .... we ... renovations have just been improved and so having these few placed so much better for Art. If the environment really, really did put me off and I think I cannot work in this place. If

it was cold, dirty and I would leave the school, and people put more graffiti in dirty places. People don't put graffiti on nice walls."

(Pupil 3)

"Why so many stairs? Can't help disabled pupils. Why are the corridors so narrow? Why is there no covered walk way between buildings? Why is the lighting so poor?"

(The first teacher)

"Its such a difficult one ....er .... would it have been such an old building? I think there is a problem really because there has been so many changes on the types of lessons that a constructor of a school would have been planning a building for a different sort of teaching. So, in a way, it would really be fair, sort of, to say .... er .... you know, that not we have to do a lot more group work, there's a lot more discussion work involved, there isn't quite the need for everything for a lesson to be on desks and that sort of thing. So, in a way, it would be almost impossible, I think, to go now to the person who built the school. We like the school, as staff, but I think it's an old building and planned with different things in mind."

(The second teacher)

Finally, I was also inquiring into any other points the respondents wanted to add or comments to make on the way I asked the interview questions. The only one comment received was more positive than I expected (a challenge to my style of enquiry), and the general impression was useful for reflecting on the maintenance of the existing environment as an immediate approach to wishing to see "good behaviour". The first teacher respondent commented:

"Er .... I would want to, sort of repeat that perhaps our school is full of well motivated and well behaved children. I don't know, if we would notice changes – you know, the physical environment .... er ... has, maybe, a direct relation to behaviour. But, I think, a clean, well maintained environment leads to good hard work and behaviour. That is the way I would put it."

EXTENDED ANALYSIS OF ATTITUDE- BEHAVIOUR CONSISTENCY

Earlier in this chapter it was noted that the first empirical attempt made in this study to establish the school physical environment- pupil behaviour links failed, rather the data yielded the school physical environment-pupil/teacher attitude links. The second study was, then, designed in part to determine whether attitude can emerge as behaviour. Therefore, this extended analysis discusses the issues of attitude-behaviour consistency in light of the data obtained in study 2. I hope to use a qualitative approach in interpretation. One of the reasons for using this approach is that the data (of study) themselves are qualitative. Another reason for the choice of a qualitative approach was a deliberate one, that is, to enable me to match attitude to behaviour. The researcher also felt that in the past, a 'direct experiences' approach had not been used in analysis of attitude- behaviour links; and all these reasons have been reached in the process of progress of this research. Also, Heimstra and McFarling (1978) have explained the value of a 'direct experience' or qualitative approach in the area of the physical environment-behaviour link that:

> "... the meaningful study of relationship between physical environment and behaviour is the one which relates characteristics of the physical environment to human behaviour."
>
> (p.5)

So with the help of study 1, interviews, and participatory observation, the researcher attempts to demonstrate attitude-behaviour links – Table 28 below.

Table 28: An extended analysis based on attitude-behaviour consistency (in this table I am trying to establish attitude-behaviour relations).

No.	Items	Attitudes		Behaviour
		Favourable	Unfavourable	
1.	Dislike of school			• Still comes to school
2.	Sharing material with other pupils during lessons		/	• Helping others in positive terms
				• Seeking one's own benefit without regard for others
				• Chatting with others rather than listening to the teacher
3.	Carpeted floor	/		• Littering
				• Happiness
4.	Uniform wearing		/	• Wearing uniform at all the school times
5.	Narrow corridors and stairs		/	• Nil
6.	Pleasant display of pupils' work	/		• Pleasure in the display – as a tendency to engage in the activity continues
				• Interesting situation – one in which pupils are attracted towards a kind of work – viewing it
7.	Old school building		/	• Nil
8.	Graffiti		/	• More graffiti writing
				• Complaining for cleaning
9.	Unclean toilet conditions		/	• Graffiti writing
				• Littering
				• Avoidance
10.	Inadequate heating (too cold		/	• Disinterest in the lesson because a pupil is more bothered about keeping warm than doing class work.
Note: Example of ten items were selected with reference to interesting categories of responses. The items were received from both study 1 and study 2. Also, the nature of responses to the items were seen as illuminative in that it can be used to reflect on Anderson's (1981) theory.				

From this table of attitude-behaviour links, it appears complex.

DISCUSSION AND SOME CONCLUSIONS ON ATTITUDE-BEHAVIOUR RELATIONS

Before moving to the general discussion, the empirical evidence from data set 2 will be linked to previous writing on attitude- behaviour relations.

Anderson (1981) described earlier in this chapter, theorises that behaviour will be more accurately predicted from attitude if we know: emotion, consistency, target, direction and intensity of the attitude. Although the position of Anderson's theory still needs to be given some respect in terms of its use for designing attitude questionnaires and describing the characteristics of attitude – as given instance with the data set 1. It is certainly not a unique approach necessarily for being able to explain the assumption that attitude and behaviour go together in a consistent manner. In investigating what behaviour are the consequences of the attitudes identified by the study 1 (attempt to relate specific attitudes to specific behaviour) as shown in Table 28, even Anderson's approach, which I used for illuminating my findings, is not explicitly supported by the empirical data set 2. Rather the results were complex (mixed up) and perhaps this relationship is a less predictable thing. In other words, however, what people say is not necessarily the same thing they do. (Table 26, which interprets the link, should be observed with characteristics of the school physical environment in mind.)

For example, in questionnaire data, most respondents expressed favourable attitudes towards carpeted floor (Anderson's – target) as very important (Anderson's – intensity); similar feelings were also expressed during the interview study that it is a friendly environment, controls noise level and keeps rooms warm. But from the findings of the observation aspect of the study, the pupils litter on it. Thus, it may be argued that the outcome had direction or differed between respondents: 1) its presence makes feelings of happiness, and 2) littering.

Also, pupils' attitudes towards sharing materials with other pupils during lessons were unfavourable (Anderson's direction) and the intention to perform disruptive behaviour

as a result received a high degree of intensity in study 1 ('behaviour will be worse'). But from a practical prediction, the situation has two different meanings: i.e. favourable (direction) and unfavourable (direction), behaviourally:

1. for some it was a way of helping each other;
2. some tend to seek their own benefits without regard for others;
3. and for others it is a disruptive thing in that they tend to chat more with others (in the sharing group) rather than listening to the teacher.

Further, some attitudes tend to be just for the 'hum' of attitude – the present evidence is that pupils who 'dislike school' attend school (perhaps because they dislike school for specific reasons). That is, some attitudes do not emerge as behaviour.

Furthermore, study 2 reveal some extreme negative attitudes of pupils towards the wearing of school uniform: "I hate uniform", note the phrases "not at all important" and "hate" – according to Anderson such extreme expressions will never fail to result in behaviour. However, with respect to the present findings, extreme attitudes do fail to result in behaviour: for example, it was noted that pupils who "hate" uniform were seen wearing uniform on all school days.

Also, rules or social norms can seem to play an important role in determining whether or not there can be a relationship between attitude and behaviour. That is rules may stop some attitudes from becoming behaviour. This became clear in the present study when some respondent said: 'I wear the school uniform daily because the school rules are strict'.

Family relations and friendship also can seem to play a role in determining whether or not an attitude becomes behaviour. This became clear in the present findings, when some of the respondents said that pupils who dislike school continue to come to school because of pressure from their parents and that others have friends in the school.

The present empirical evidence also (this is where it becomes more complex) reveals that, although certain attitudes may lead to the intended direction of behaviour, sometimes a simple attitude may lead to several behaviours. As can be seen in Table 26, items such as "graffiti" and "unclean" toilets seem to have fallen into this category.

Summary of study 2

Throughout this chapter at several points evidence on the issue of the physical school environment-attitude relations and links with behaviour was considered. The general conclusion to offer here is that Anderson's approach was not very useful for predicting attitude-behaviour consistency. Similarly, a study of attitudes, however, appears not very successful for predicting overt behaviour. Indeed, the definition of attitudes earlier reflected this: attitude-behaviour consistency. The present empirical evidence follows many other studies in concluding that predicting behaviour from attitudes is not as straightforward or simple a matter as would seem at first sight. Rather that a number of factors may affect this connection such as family relations, friendly relations, social norms or rules.

The important part of Anderson's (1981) approach helps to explore favourable or unfavourable attitudes in many different ways: in terms of emotion, consistency, target, direction or intensity (extend/strength). Taking account of these factors I was able to identify the kinds of attitudes directed towards the physical environment of school.

Despite these conclusions about attitude-behaviour links, it must be remembered that new research in this particular area will continue to appear. By way of suggestion, it should be noted here that there may be two attitudes relating to an object (double direction approach). This is not the same approach as that of Festinger (1957) and Anderson (1981). They described a single direction approach, which it seems cannot adequately predict this relationship between attitude and behaviour. The approach I am suggesting is something to do with answering the question: "What do we know about the difference

between attitude and the rule governing an attitude object/situation and attitude directly expressed towards the object?" It is here that the double direction approach is created: one type of attitude may be direct, and the other indirect. In view of the present findings, for example, there was a pupil who expressed a negative attitude directly to wearing the school uniform, but her indirect attitude – that is attitude towards the school rule governing uniform wearing – was 'possibly' stronger, she obeyed. As a result, she wears school uniform. Her attitude towards the school rule governing uniform wearing was consistent with uniform wearing. Similarly there was the case of a pupil's attitude towards obedience to parents (in terms of the parents' positive relationship with the school), which appeared much stronger than a pupil's attitude of disliking of school. As such, the pupil(s) keep coming to school: it is the indirect attitude of the pupils' towards obedience of their parents that seems to lead to their attendance behaviour. Just as Festinger's (1957) example of the attitude towards cigarette smoking should have been explained that the attitude towards smoking cigarettes may be stronger (direct also) than that (indirect) which regards smoking as causing health problems – "cancer".

Another way of interpreting the relationship between attitudes and behaviour is perhaps that people change their attitude or behaviour because of their social relationship position such as family, friendship or could be peer group.

Perhaps another major conclusion to draw from the present analysis is that certain attitudes, as can be seen in Table 26, predict the general class of behaviour that is relevant to the attitude but rather attitudes can seem probably not to predict any single behaviour. In this view, it may be argued that perhaps because studies such as by La Piere (1934), Warner and De Fleur (1969), Mischel and Peake (1982a, 1982b) and Manstead et al (1983) on attitude-behaviour consistency, reviewed earlier, used measures of attitudes to predict specific behaviour, they were unlikely to find attitude- behaviour connection.

The conclusion to draw on the positive direction as that although some attitudes may not be able to predict absolute specific behaviour, specific instances exist in which it can

seem to – display of pupils' work is the example in the present moment analysis: pupils all view it and feel happy about it.

In addition, I want to say that these predictions have become possible because of the direct experience approaches to wanting to discover the kind(s) of behaviour of the attitudes, and this is the first attempt. Hewstone et al's (1993) hypothesis that attitude objects are better predictors of behaviour, it appears, is now supported by the direct experience approach of attitude-behaviour relations.

Finally, the most important conclusion to draw from these findings is that it appears the physical environment of school is related to both pupils' attitudes and behaviour. So far as attitude is concerned, the empirical evidence has shown that both secondary pupils' and teachers' evaluate: that is have the tendency to respond favourably or unfavourably towards the physical environment of their school – with reference to the perceived quality or conditions. This focus also suggests that the physical school environmental attitudes can be measured, and this is because attitude continues to show, in terms of the pupils' emotion, the degree of consistency among pupils' attitudes (similarity) target (attitude object or situation), direction of feelings (positive or negative), intensity of feelings (directed towards an object). This discussion might be better focused on study 2. More general points are discussed in the next chapter.

NOTE:

To reiterate, the findings of this study suggest that in different individuals the same attitude, directed to the same object or situation with a similar degree of intensity, will not necessarily lead to behavioural response. Furthermore, the findings suggest that whereas in relation to individuals, similar attitudes leads to different behavioural responses; the attitude of a group directed to the same object/situation will not necessarily lead all individuals within that group to display the same behaviour, it may indeed lead to radically different behaviours. Finally, not all attitudes held with a high degree of

intensity lead necessarily to behaviour. From this conclusion it would appear that the extent to which attitude dictates a behavioural response depends on the 'nature' of the individual holding that attitude. In which case research into attitude-behaviour links should focus on both the group and the individual levels.

CHAPTER 10

GENERAL DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

> "The school cannot perform its function adequately unless the premises themselves are an example of what we naturally associate with a civilised life. Thus the building should be dignified and pleasing as well as conducive to health. The internal decoration should be bright and attractive, with specimens of good craft work and suitable chosen picture placed to the best advantage. The school, moreover should give an impression of order and cleanliness reflected, for instance, in the care of books and apparatus, in the proper storing of the clothes in well kept cloakrooms, and in the tidy appearance of the playground and the offices. Wherever possible, too, the dreary appearance of the typical school playground should be relieved by trees, shrubs, lawns, and flower gardens."
>
> (Board of Education 1937 : P. 28)

INTRODUCTION

The major aim of the exploration was to identify and explore the link between the physical environment of the school and pupil's behaviour. The data are based on a small sample of self-nominated secondary schools. The points which emerge from the results are discussed below in two sections: a) the hypothetical propositions and b) general issues, changes and alternatives. In addition, some specific recommendations are made.

A) Hypothetical Propositions

Hypothetical Proposition 1

It was proposed : "under a condition of un-interest for the physical environment of school, that pupils' behaviour, perhaps as well as attitudes, in a perceived 'poor' physical environment of school conditions is not different from their behaviour in a perceived 'good' physical environment of school conditions". The data obtained from both studies confirm the previous conclusions of Rutter et al (1979), HMI (1987, Elton Report (1989), DFE (1993) that there appears to be links between the physical school environment condition and pupils' behaviour. Not only was there broad agreement between secondary

pupils and teachers and between different schools on the fact that the physical setting of a school is important in the positive climate of the school (and orderly manner); there was also agreement that the physical setting of the school itself do affect the attitudes of both pupils and teachers. To reflect on how the secondary pupils/teachers felt it is clear to note here that the perceived "poor" type of the physical conditions of the school environment must not be allowed to happen in school. In general, the physical setting of the school can seem to be one of the most important factors for pupils in judging whether or not they would like a school (see Table 11). The secondary school teachers' own views supported this (see Table 12).

When the respondents were asked to select the 3 most important items from a list of ten of the physical school factors (provided by the researchers) – As the result can be seen in Table 13 (responses of the pupils) and Table 14 (responses of the teachers). There are differences in pupils' criterion for assessment of the physical school environment differences. It became extremely complex to distinguish what was most important and what was less or not important. In that, although there were some items much more common than others to the respondents, the important levels given to the 10 items did not differ as between the most important and less important. What was less or not important to one respondent, was most important to the other. At one point when respondents were asked to give some reason for their decision – it was found that respondents favour 'good' quality physical school environment because of its attractiveness. It is hygienic (healthy), comfortable, makes them feel interested in academic work and it reduces stress in the teachers. The feelings expressed for the effects of the 'poor' type of physical school environment included: that it does not make pupils settle down (particularly when cold); it is uncomfortable for learning; it makes pupils feel reluctant to come to school, and that pupils would not work hard as a result.

Concerning pupils' behaviour and links between the physical school environment, the findings of the second study identified the following links:

1. a dining hall, designed by staff in discussion with pupils, with good furniture fittings and attractive decoration indicated remarkable happiness/friendliness (this falls under perceived "good" physical school environment and pupil's behaviour);

2. extensive display of pupils work showed practical interest which encourage academic work. This conforms with reports, e.g. of HMI (1987) which suggested that pupils can be better motivated to behave better when teachers display their work.

3. comfortable furniture fitting (perceived as 'good' physical school environment) made pupils concentrate on work (concentration on work is seen as good behaviour) and at least, as reviewed in Chapter 6, four American Studies have indicated the value of comfortable furniture fitting approach to pupils behaviour. The findings of this study revealed that pupils who felt uncomfortable on their chairs stood up unauthorised, some refused to sit down, others were stubborn with their teachers as a result. This confirms findings by, for example Richardson (1967); Sommer (1969); Becker, et al. (1973); Deasyls (1974) and Koneya (1976).

4. insufficient storage (which is regarded "poor" physical school environment condition) showed in high levels of untidiness.

5. insufficient sports facilities (another perceived "poor" physical school environment condition) increased problem complaints and bullying behaviour – as already mentioned. Hart (1979), Lawrence et al. (1984) and Coiled (1991) have noted that sports is one enjoyable and practical way of pupils learning to live socially with others.

6. a large number of pupils in a class (perceived as overcrowding) increased probability of pupils in unauthorised talking and laughing behaviour – and as Morgan and Alwin (1980), S Grabe (1981), Bennett and Blundell (1983) and Bell et al., (1992) point out (apparent in the review of literature in chapter 6) until enough school teachers are supplied to break down the large classes there is little that can be done to reduce disruptive behaviour.

7. the presence of graffiti involved more pupils in writing graffiti itself and the literature on this is massive as shown in chapter 6 of this study;

8. inadequate learning materials (also known as inappropriate learning environment) increased the probability of pupils wandering around the classroom during lesson time and including unauthorised talking/ disruption of other pupils from working / stubborn behaviour;

9. unclean toilets (associated with poor learning environment) littering / graffiti and avoiding behaviour – and this result in particular is in agreement with the findings of the National Union of Teachers (1992) that inadequate /unclean toilets have at least some influence on pupils turning up late for lessons, as well as on their health;

10. cold conditions made the pupils reluctant to work and as noted in the review of the literature, Lofstedt, Ryd and Wayon (1969) and Pepler (1972) the American researchers who have looked at this problem found similar results.

To summarise, what the hypothetical proposition 1 would seem to predict is that pupil's attitudes / behaviour differ as between the perceived "poor" and "good" physical school environment conditions. In this analysis, perceived good behaviour came into close association with the good physical school environment circumstances, and the poor physical school environment conditions are clearly associated with perceived disruptive pupils' behaviour. Although here again it should be noted that some pupils (a few) would still behave badly even if the physical school environment conditions were good and, on

the other hand, some pupils would behave well even if the physical school environment conditions were poor. This may be because of other influences mentioned in chapter 3, or individual differences. Also, it should be emphasised that the findings indicate the considerable importance of the physical school environment setting in association with both the pupils' and teachers' attitudes; for example, a pupil's liking of a school is associated overwhelmingly with several aspects of the physical school environment (Table 11 and Table 12). Thus, the physical school environment circumstances, though regarded by a number of earlier researchers as of little consequence, appear to be highly influential upon pupils' behaviour/attitude, as well as by teachers.

Hypothetical Proposition 2

It was also proposed that: "under a condition of the school as a behaviour setting that pupils behaviour are importantly related to the physical environment of the school (that there is a connection between the appearance of the physical school environment and behaviour of their pupils; and that there may also be a connection between the physical environment of school and their pupils' attitudes). The present empirical evidence, particularly of study 2, suggests that this is indeed, the case.

Hypothetical Propositions 1 and 2 have similarities and differences. They both attempted to understand the relationship between the physical school environment and pupils' behaviour. They differ with regard to the fact that the former attempted to understand behaviour differences as between the perceived "good" and "poor" characteristics of the physical school environment. The behavioural setting approach sets out to understand how the established physical school environment promotes and limits pupils behaviour (what goes on there?) – That is, to understand its behavioural denotative and connotative meanings. To argue this in some ways: even if we abandon the idea that pupils' behaviour (as Rutter et al. 1979, claim) makes no difference, no matter how tangled views of the physical school environment may be, we may be doing violence to the facts, not only as described in the reports of psychological research, but also as the conditions carry out (according to Dewey,

1944) essential setting functions, and school education aims as mentioned in Chapter 2 of this study, "good behaviour" is one of the most important outcomes expected of formal schools.

As already considered in chapter 4 of this project, this theory of "behaviour setting" first suggested by Barker (1968) is that if the quality of the experience of a setting is good-behaviour standards improve; if it is bad the behaviour standard diminishes, such as noise discouraging pupils from work or paying attention to the teacher. The position sounds philosophical but it relates to the practical matter of situational assessment. Barker (ibid.) points out that these behaviour settings are natural phenomena: that is, they are not created by an experimenter for scientific purposes. Each setting has a self generated space – time locus. Each has two sets of components: behaviour and non psychological objects with which behaviour is transacted (e.g. chair, walls, paper) and the formal schools fall under this structure. Essentially, behaviour settings are stable, extra-individual units that have great coercive power over the behaviour occurring within them. As also may be recalled this principle is one of the most important in Lewin's (1951) field theory: Lewin's emphasis is that behaviour should be analysed in the natural / everyday situation where it occurs. In Skinner's (1953, 1974) terms (though it came as a result of created conditions for the purpose of a scientific experiment), behaviour is largely controlled by the immediate environment and that changing the environment will result in changes in behaviour. The present findings are consistent with these theories.

The following findings from the study support the view that the physical features of the school setting play an important part in determining pupils' behaviour:

1. Class Size:- A large number of pupils in a class tend not only to elicit feelings of discomfort (Altman, 1975; Bell et al. 1992), but according to the present findings, also it already seriously affects pupils' attitudes/behaviour and severely disrupts the smooth running of essential classroom tasks. For example, in the questionnaire study (see Table 19 and 20) the subjects expressed negative feelings towards a large

class size; and they gave the comment that in a smaller class size 'the teacher's attention will come on pupils more often'. Both the interview and observation findings confirmed this and revealed further that the large number of pupils in a class is a potential source of classroom disorder to the extent (as the evidence shows) that in most instances it involves some pupils in unnecessary disruptive talking and laughing and even it was not easy for the observed teachers to get every pupils' attention. These findings are similar to those American studies reported earlier (Freedom, 1975; Baum and Valins, 1977; Gump and Adelberg, 1978; Baron and Rodin 1978; Bell et al. 1992). Thus, if there are relatively many pupils available in a class, probably some will be listeners or watchers, not active classroom setting performers. There are three issues here: i) the pupils need the teacher's attention ii) the teacher needs the pupils' attention and iii) essential classroom function is inconsistent. So, to overcome this attention problem, keep the class in order and associate them with essential classroom activities – would require, I think, more teacher and thus reduce the average size of the classroom.

2. Display of pupils work: Pupils tend to become more involved in academic work and excitable, than is disruptive acts – following display of their work. According to the findings of the observation and interview study – display of pupils work seem not only necessary, but also important to the extent that pupils behaviour would be positively influence by it. In the respondent pupils own words; display – "is very encouraging.....from the pupil's point of view"; "you feel proud and encouraged if your work is displayed"; "it aids to learning"; "you feel sort of that other people are looking at your work" (see table 27). The respondent teachers acknowledged that: display – "pupils like it" – "they do not sort of spoil it" – "they enjoy working for display"; "children enjoy seeing their work on display and work hard as a result" (see Table 28). Thus it is clear, however, in this case, to emphasise the point made by the DFE (1993 p.19) that prominent display of pupils' work holds

pupils back from disruptive acts such as damages (note the word "spoil" above in the raw data) and direct them to seriously perform the task of the setting; as will it should be understood that display is at least seen to be effective reward for good behaviour.

3. Carpeted floor: – as the responses of the questionnaire showed, the pupils and teachers agreed that pupils' behaviour might be negatively influenced by a slippery classroom floor (see Table 17 and 18). Of course the limitation here is that it is not clear what relationship there might be between slippery floors and behavioural problems – as this was not followed through at the time of the field study. Other results might help in this case. In the interview study, attention was then concentrated on carpeted floor. As the results can be seen in Table 27 and 28, all the interviewees expressed the impression of comfort; they reported that the presence of carpet made their school more attractive, more like a home (friendly); they said – they had the feeling that warmth had improved, and that carpet does promote interest in the pupils (in terms of decrease of noise level) to concentrate on the essential classroom function. In fact according to the comment of the questionnaire respondents noise was associated with disruption (it was considered as an act that would disrupt classroom activities). From these findings it seems most likely, however that slippery classroom would have the problem of noise and this as pointed out by Cohen et. al. (1973), Bronzajt, et. al. (1975), Damon (1977), Cohen et. al.(1980), Cohen et. al. (1986); Mortimore et.al. (1988) and Dunham (1992) reviewed earlier, that where noise level was low movement around the class was usually working-related and not "excessive". According to these findings then, this seems another positive way forward to improve on the classroom life and ought not to be ignored (carpets stop pupils from making disruptive noise).

4. Split-site:- The findings on split-site of school also appears in line with the idea of 'behaviour setting approach'. The observation and interview results indicated that the split-site of school undermines time for certain lessons, lessons for which pupils and teachers have to move from one site of the school to another. Split site of school was seen as an acute problem, as one of the respondent teachers comments: "We realise that our pupils are faced with problem long walks between the buildings and we have given them time for that" – "But we are wrong if we say that like it ..... my ten years experience in the state schools – some pupils moved late for class and were slow to settle down." (see Table 28). In fact, many of the pupils complained of cold at the time of the observation. As noted also earlier (Lofstedt and Wayon 1969; Pepler 1972; Heimstra and McFarling, 1978, Benson and Zieman, 1981) it was cold appears to disrupt pupils attention and classroom lesson in progress. In interview the respondent pupils say that they use to complain when they felt cold. (see Table 27). This, it would appear, experiences of an adequate and satisfying environment for carrying out essential task of school setting is seen to require single-site and this seems to be the direction suggested to reducing problem complain behaviour, time concern for each lesson and pupils' lateness for class. However, split-site, I think, is one of the most difficult school problem that change can be thought of. In sense of concern for the pupils in such situation – I would say the most convenient way or approach is to think in terms of covered way. In case of cold as Elton Report (1989) suggests requires adequate heating.

5. Sports facilities :- According to the HMI Report (1999-1991) sport is an essential thing not only because pupils like it but also is an issue schools are expected to teach. In the questionnaire survey both the pupils and teachers were concerned about the need for sports facilities: Pupils – "I need sports facilities for good P.E.", "I like sports – I hardly use sports facilities", "sports facilities are important in the first place because to enjoy P.E. more"; Teachers – "sports facilities are essential

for letting off steam". There are two things here: i) it appears sports facilities are not adequate in the schools and ii) this inadequacy seems to put teacher-pupil conduct in conflict.

This was confirmed by the observation aspect of the study – it was found out that inadequate sports facilities could lead to pupils not only to disagreement with the teachers, but also to pupils bullying other pupils. Which in all is a quite a wrong thing to see happen in school. The idea of 'order' (HMI, 1987, Elton Report 1989, DFE, 1993) had no chance because all the pupils felt that they ought to participate. Indeed, as can be seen the problem is there in the schools. It is such instability which deserves attention as to improve good behaviour or decrease the disruptive behaviour. It may also be noted that these findings converge with earlier review, particularly in chapter 6, on this subject – sport facilities.

6. Material resources for learning and teaching:- Despite common beliefs that material resources such as text books, science equipment, teaching aids, musical instruments, science laboratories, library book, rulers, pens, pencil, paper, maps relate to pupils' achievements. (Dewey 1944; HMI 1987; Elton Report 1989, Reynolds and Cuttance 1992, DFE 1993). The questionnaire data on this subject indicated that in general that there is a problem of quality and inadequacy (see Tables: 11; 12; 13; 14; 17; 18). What would pupils do in such a situation. The following are examples of the comments given by pupils themselves as this problem faces them: "Of you do not have the academic facilities it will be harder for you to concentrate"; "if students have equipment and a good library service they will have a chance in doing well in their exams"; "we need equipment to help us with our education"; "without resources subjects are difficult to teach". So, as a result (at the time of interview study) the pupils reported that: "in sharing text books I sort of push it more to my side" – "if you do share you tend to chat more with the person next to you rather than listen to the teacher" – " You know you have to tell the teacher I

want a new book" – "get a new book" – "it tends to weaken interesting lessons". Evidence for behaviour became more clear during the observation study when some of the pupils were noted wandering around the classroom to search for their immediate needs to perform the essential classroom task; there was disagreement between pupils and the teacher because the pupils moved around, talking to their peers without asking the teacher; pupils who were in need of equipment became stubborn and never settled down properly to concentrate on doing the required classwork. As may be recalled, earlier review (chapter 6) on then relationship between learning / teaching materials and pupil's behaviour, although the studies were neither systematic, not specific, nor an "physico-environmental designed, they try to urge such demand for and experiences of inadequacy / unsatisfying teaching-learning materials to be more critical in the evaluation of ways how pupils behave. To give an example, Watkins and Wagner (1987) note that with regard to matters of discipline, for the form teachers or tutors to exercise such a role effectively requires that resources are available for the role. In situations where the resources are not made available the discipline system may not succeed or be effective – in that the school is generally empty from its core, and overworked teachers or year tutors use their energies ineffectively. Whoever is concerned with the British secondary school material resources at least the present evidence seems to present him / her with a challenge – it may be problems that differ from school to school, but still appear to need attention.

7. Toilet: In this country (Great Britain) as already mentioned earlier, the NUT (1992) in their survey of health and safety standards in the secondary schools show that toilet conditions were far from purposefulness of school as an institutional setting and that it looks uncaring and that it is inadequate in many schools in particularly England and Wales. According to the union's survey children queue to use it. (See figure D.) The finding of the present field experiment shows similar predictions.

Moreover the pupils (according to the questionnaire data) see toilets as one of their most important essential needs in connection with school life. (See Table 9) and they gave critical comments as for instance: I go to the toilet and I would like them clean – makes disgusting if toilets have cigarette ends all other in the toilet – if toilets are dirty you don't want to use them – lavatories are important because some of my friends have toilet problems. Of course toilets are very important for every one living life. (Who does not eat or drink and living – toilet is essential for everyone). As may be expected the respondent teachers acknowledged this toilet problem experiences of their pupils and that: pupils are most concerned about lavatories and are not happy when they are in a poor state. The observation study revealed that pupils avoid using dirty toilets with graffiti on its walls and litter in it while they queue up to use the clean one(s). As this was confirmed by the interview study: – I usually go to the good ones – I like clean toilets – there are dirty toilets but I don't use them; reported by the teacher: pupils avoid using it. The points to raise out of this evidence is why allow such things to exist in school? What happens to the pupils in school where there is no alternative clean toilets? And even if queuing is necessary – what if the pupils report late for lessons who is to blame for their lateness? It seems a pity!

8. Furniture and fittings: The relationships between furniture and fittings and pupils' attitudes/behaviour and essential school / classroom activities were nearly the same as observed in earlier researches (mostly American: Richardson, 1967; Sommer, 1969; Becker et. al. 1973; Koney, 1976; the only British one cited at the time and had a fairly clear theoretical view on this subject was Watkins et.al. 1987.) More recently, along similar lines Awiria (1991) and Reynolds and Cuttrance (1992) both studies are British and suggest that pupil's comfort in terms of furniture and fittings be of front importance for encouraging them in perceived good behaviour and essential school activities. Following the present field evidence, for example,

in the questionnaire study one of the respondents gave this comment: "If there are good furniture fittings the pupils will want to learn." This seems to suggest that if the furniture arrangmenets are 'bad', uninterested / lazy behaviour is most likely. While this became clear during study two, a number of issues associated with furniture were noted as: because all almost all desks and chairs in the classrooms observed were the same size (unadjustable), the taller pupils had to 'wear' desks on their knees, while the shorter pupils either used their bags / big books placed on their chair and then had to sit on them or stand up and as this behaviour was unauthorised this involved the pupils in stubborn, disruptive behaviour. These findings were confirmed by the interview results, as for example one of the respondent pupils reported that certain furniture conditions make group discussions difficult (see Table 27). From this evidence it may be said that, some pupils who feel more comfortable could be the best performers of the class work, while their peers who face difficulties of comfort will probably be best disrupters.

To summarise, proposition 2 predicts a complex issue underlying the relationship between the essential school setting activities and physical school conditions for performance of the activities and the behaviour in which the pupils engage. According to the present findings some physical conditions of the school may be successful in guiding pupils in performing the essential school setting activities. Others may fail to arouse their interest and 'industry' conditions which to a large degree, determine the level of the perceived good behaviour (see chapter 2) and account for the unpleasant happenings of certain disruptive behaviour in pupils. Supportive to this reasoning and findings was Charlton's (1986) that those:

> "Who are disinterested in or disenchanted and dissatisfied with the educational programmes schools offer to them, may well direct their interest and energies away form school tasks towards a variety of maladaptive behaviour (e.g. non-involvement in academic work, truancy, abuse towards teacher which facilitate an excitement and involvement unavailable elsewhere in school."
>
> (p.56)

To this extent, pupils' activities should be seen in context of being in part determined by material circumstances.

Hypothetical Proposition 3

The third hypothetical proposition was that: "under a condition that factors within the school themselves do affect pupils behaviour, including attitudes, that schools with a 'negative physical environment' will suffer more from disruptive behaviour than those with a positive one."

The argument to this third hypothetical proposition was to give a critical comment that the physical school environment circumstances may be highly influential upon pupils' behaviour; and it is possible to emphasise, as indicated by the HMI Reports (1988- 1991), that the physical environment circumstances may vary from school to school. The data emerging from this study suggests that to consider the influence of factors within school on pupils' behaviour, the physical environment circumstances would be a necessary component (Elton Report, 1989; Coffield, 1991). An educatively supportive school environment requires good physical environment circumstances, and some educational psychologists (see for example JMI Report, 1987; Watkins and Wagner, 1987) have great doubts as to whether such things as a whole-school behaviour approach can actually exist in any meaningful way without involving the physical school environment aspect. As Freud (1893, 1955), Lewin (1951), Skinner (1953, 1974) and Barker (1968) have put it, behaviour has a strong connection with conditions operating in the immediate or everyday environment . The Elton Report (1989) clearly referred to the whole-school approaches to behaviour as in-school evaluation, so to understand the specific areas of good behavioural support and what areas need attention. As already discussed above (see the predictions of hypothetical proposition 1 and 2) the finding of the present study are similar – It was found both that the physical school environment as an institutional setting does actually strongly have connections with pupils behaviour. For the good physical school environment the outcome was the perceived good behaviour and the poor physical

school environment had strong links with disruptive behaviour. Hypothetical proposition three then, had explored an indication of these in terms of the differences between schools. Hypothetical proposition 3 thus was confirmed. Data suggests that not all material circumstances are the same of all schools.

In view of what the empirical part of this study shows, the reasons for differences between secondary schools disruptive behaviour rates, however, appears to have as much to do with variations between their physical environment conditions. It must be noted that there is a consensus between the HMI Report (1988-1991) reviewed earlier in chapter 5 and the present empirical finding that secondary schools differ in their physical environment characteristics. As can be seen in Table 15 and Table 16, the two sample secondary schools for study 1 show remarkable differences, moreover both secondary schools are in the same LEA area. For example (keep an eye on the tables) data revealed that School A was far better in certain conditions that School B: conditions such as toilet provision, signposts, classroom floor and standard of cleanliness/maintenance. This suggests that behavioural problems associated with the inadequacy of these factors cannot be felt in School A; while School B the incidence of disruptive behaviour may be increasing to a comparatively high level. In fact there was also similar differences as between the sample schools for Study 1 and that of Study 2. The sample school for Study 2 was free from some of the problems found present in the sample schools for Study 1: such as problems of noise, lighting, congestion in the corridor, inadequate level of display of pupils work, slippery floor). What this result would seem to indicate is that disruptive pupils come from poor family backgrounds (Bowlby, 1966; Ainsworth and Pease, 1987; Reynolds and Cuttrance, 1992; Charlton and David, 1993) (it should be noted that the issue of family influence is beyond the scope of this study), it is as much as the schools with poorer physical environment conditions, in fact, would appear to hold high disruptive behaviour. It does not therefore support discipline procedure nearly expected to be uniform to all schools. (The Educational Reform Act of 1988; Elton Report, 1989; DFE 1993; Her Majesty's Chief Inspector of Schools – HMCIS, 1993).

To summarise, hypothetical proposition 3 predicts that certain physical school environment characteristics make one school look different from another and thus it would seem schools experience differently the disruptive behaviour/negative attitude levels. The critical point was then to consider these differences between schools as part of the problem – which in a sense is an expression that indicates that all pupils will be taken care of.

Hypothetical Proposition 4

Another hypothetical proposition was: "that children's behaviour varies according to the nature of the physical environment of the school and the classroom with which they are working". This proposition was explored with the recognition:

Issue 1) – "That what may be perceived as good behaviour in one schoolroom setting may not be termed good behaviour in another".

Issue 2) – "That differences between a school's components in terms of arrangement are sometimes deliberately designed to illustrate differences in subjects requirements, and places for special work and activities" – "that it will have a positive or negative effect upon children's behaviour."

Hypothetical proposition four was authenticated; both issue 1 and 2. The present findings revealed that behaviour perceived as determined by context and purpose of the context. It was noted that the physical classroom arrangements in drama are very different from those in a science laboratory, or history or geography – in each case, aspects of the physical setting were allied to the nature of the subject and determined the behaviour there.

As the preceding hypothetical proposition seem to indicate that differences between schools in terms of disruptive behaviour also reflects the different physical environment characteristics which the individual secondary schools hold. As such, hypothetical proposition 4 then attempted to understand the differences of pupils' responses (Elton

Report, 1989; Wheldall, 1992; Charlton and David, 1993; DFE; 1993) in different classrooms, in relation to the material arrangement there. From the behaviour setting standpoint (Barker, 1968), a pupil's behaviour has connections with the school setting as a whole, which is likely to be related in some ways to the specific sub-component settings of the school. At the same time, involving Lewin's (1953) Field Theory and Skinner's (1953, 1874) Operant Conditioning Theory – The immediate context of a school for a pupil is often the classroom environment; and more closer is the one physical in practical terms: e.g. sitting on a chair or holding a pen or holding a book. Freud's (1893;1965) Psychoanalysis Theory points to very much the same thing, indicating that within a family behaviour setting there are several sub-parts: e.g. mother, father – A child's responses to the father would be different from that to the mother – such that getting to know the reasons for this child's attachments would define the child's behaviour or stress. Meaning that in some ways a pupils will behave differently in different classroom situations round knowing that will help to improve our understanding of a pupil's behaviour.

As indicative of the effect of the physical classroom environment characteristics on pupils behaviour – for example, in the questionnaire study, a question was asked about what pupils would do if taught in the dining hall. As the results can be seen in Table 17 and Table 18 a smaller number of the respondents thought it would not have an effect on behaviour whilst a remarkable higher number of the respondents thought it would involve pupils in disruptive behaviour. Also, the interview study revealed that pupils pay less attention to the teacher if taught in dining hall (see Table 27). This leaves, however, no room for doubt at all that if a subject is taught in a room which is designed for a different purpose – very large number of pupils may engage in some disruptive behaviour (see Table 27).

Differences in terms of class size of different classrooms appear to determine in some ways how differently pupils behave in different classrooms. Consistent with this notion,

relationships were found between a large class and pupils behaviour. As can be see in Table 27 it involved pupils in challenging the authority of the teacher and led to untidy behaviour. A similar kind of message is to be found in the research of Hutt and Valjey (1966) – They reported on research in the effect of varying group density on the behaviour of (among other factors) normal children. Group density varied from fewer than six to greater than twelve. As a function of group density, the researchers found significant changes in three categories of behaviour: 1) aggressive, disruptive 2) social and 3) boundary (withdrawal to the edges of the room. The children showed deterioration of behaviour with increased aggressiveness/destructive behaviour. Thus indicating that class size of the classrooms are also important in predicting why pupils behave differently in different classrooms.

Material resource conditions reflected also very strongly the behavioural differences as between one classroom and another, in the present study. The term "material resources" is used at this present moment point to mean teaching / learning equipment such as text books, rulers, pens, pencils, geometry sets, laboratory apparatus, rubbers, art supplies or paper (Gordon and Lawton, 1984). Some of the disruptive behaviour seems to occur as a result of pupils searching for the missing or lack of learning materials. As already detailed in chapter 9 and evidence emerged in the observation study where a pupil stood up in a class unauthorised to search for a material stem which she did not have and she was as a result seriously reprimanded by her teacher. The issue actually went as far as disrupting the whole class: that is, some pupils had to move around to share books with their peers or borrow from friends. From this view, however it is possible to argue that if the classroom observed had adequate equipment / materials these pupils would get on with their work in a settled, and positive way, without having to give stress to the teacher. Too, this finding appears to support the suggestions found in the literature review on connection between material resources and pupils behaviour reported in Chapter 6. This suggests that to keep pupils to behave in a desirable good fashion would at the same time

adequate material resource support. According to this, clearly, it appears if a pupil see a classroom set-up as being threatening or unsupportive, a possible disruptive reaction is to identify with the unsupportive classroom setting.

Dewey (1944) likens behavioural differences of pupils between one classroom and another with materials gathered together for activities selected to external and enrich understanding of a particular curricular topic. He argues that classroom materials might be arranged by subject area; e.g. language; maths, science; or the materials arranged might each related to an aspect of a skill: reading comprehension, listening with understanding, group work activity. Dewey, then goes on to suggest that behaviour cannot be similar, however, in these different functions. The present study supports this notion. Different subjects had different classroom physical setting style. It seems that what is seen as disruptive behaviour in one specific subject-room will be seen as normal behaviour in another. In other words, many pupils seem well behaved in different ways, depending on the subject (lesson) the are attending. This seems actually evidence which would supplement what is know by many of the classroom researchers (Robertson, 1981; Tattum 1982, Reynolds and Cuttance, 1992) that many pupils are troublesome only with certain teachers. It should be noted that the researchers have been referred to repeatedly to emphasise the points.

Another factor which indicates very different behaviour in different classrooms seems to be classroom seating arrangement style: in a row or group or round circle or semi-circle or separate. The present observation study reveals that sitting in a round circle and the teacher in the middle makes it difficult to see or attend to the pupils at the back. Also in the group seating arrangement when all the pupils were asked to turn and face the teacher – There was a shifting of chairs and jostling of bodies, which inevitably destroyed and disrupted the momentum and continuity of the lesson. Also group seating arrangements – in terms of pupils negotiating the route to and from the teacher's desk, whether in search of guidance or materials added to another problem of classroom conduct and confusion. In this case, the different styles of classroom seating arrangement results did seem to support the notion that classrooms make differences in terms of pupils behaviour.

To summarise, hypothetical proposition four predicts in particular that the physical classroom environment has connections with pupils' behaviour. That the physical arrangement of the classroom is often quite different, and so the dynamics of classroom behaviour will be different. Pupils behave in a disruptive category if a subject is taught in the physical setting designed for a different purpose. Also that the physical classroom environment can encourage or challenge pupils – as such secondary pupils will be less disruptive in the physical classroom environmental arrangement which supports the lesson or learning activities than they will be in one which is lacking improvements. As different subjects or learning activities require different physical classroom environments arrangements. The arrangement of these types of classrooms determine the role behaviour of pupils in specific subject areas or learning activities – the extent that behaviour defined disruptive in one classroom setting may be regarded good (normal) behaviour in another.

B) Other issues

This section of the discussion covers a number of other but related issues.

Old building

One of the most important problems in behaviour management in school (according to Tattum, 1986; Elton, 1989; Stone 1990, Wheldall1992; Charlton and David, 1993) is the question of how far the school should try to shield pupils from the experience of anxiety. It is often assumed that anxiety is unpleasant and incapacitating and so one should try to protect children from it as much as possible (Elton Report, 1989; DFE, 1993: Charlton and David, 1993). The present investigations of the relationship between old school buildings , particularly those not maintained, and the psychological state of the pupils revealed stress or anxiety (see Table 27 and 28). What the present study did not find the overt behaviour in connection with older buildings. The trouble with older building is as one of the sample teachers' reported (see Table 28) that it is a 'big' problem to overcome and expensive: that is in terms of putting up a new building. This is not to say

that nothing can be done to improve the situation. Some schools have used the method of repainting buildings to reduce this anxiety. Pupils actually do like buildings which are nicely painted. As can be seen in the preceding chapter, the pupils / teachers in the sample school for study two expressed positive feelings towards the old building of their school because the building were being nicely repainted. The subjects said that changes of their school's buildings conditions had been well managed. This was confirmed by the observation study – pupils were happy to continue working there. This idea of overcoming pupils anxiety of older building through repainting has been supported by DFE (1993); who say older buildings need a combination of fresh paint to give pupils feelings of warmth and friendliness.

Graffiti

As Reynolds and Cuttance (1992) put it, graffiti have for a long time been recognised as disruptive behaviour in British secondary schools. In general, there was agreement between the literature reviewed in chapter 6 and the present empirical findings, showing that the graffiti in secondary schools cannot be eliminated completely. There was an indication in the present findings (see Tables 17, 18, 27 and 28) that the presence of graffiti could increase further graffiti writing behaviour among secondary pupils. Graffiti was not found everywhere on the school wall, rather in some toilets and on top of desks.

The present study was also able to examine why pupils write graffiti. The sample teacher of the interviews study did not know why pupils write graffiti. (See Table 28). Also some of the pupil subjects did not give any reason why many pupils write graffiti at same spot. However, some of the sample pupils of the interview study (see Table 26) gave several reasons concerning writings of graffiti: that it is an expression of opinion, that is informing others about one's feeling of a particular issue – similarly the 'so called' others respond in the same way (graffiti style of conduct).

Another point about graffiti in school is that it is written in hidden and mainly dirty areas and this became clear during interviews with pupils (see Table 26). In fact the present study found more graffiti in unclean toilets than in the clean ones and most desks with graffiti were wooden-top / rougher. Suggesting that may be encouraging graffiti behaviour.

From these findings, three points may be made. First, it appears supervision of hidden areas within – school will reduce graffiti behaviour. Secondly, it would seem reasonable to place a large sheet of paper somewhere within the school area for pupils to express opinions which they think they may not share with their teachers face to face and this, too, may reduce graffiti levels in school and such sheets of paper can tell exactly what pupils want – what should the school do? Finally it would seem reasonable if hidden areas such as toilets of school are kept extra clean – in that as pupils respect for nice / cleaner areas graffiti behaviour possible may be prevented.

Littering Behaviour

Also it was noted earlier in this study (see chapter 6) that littering in the secondary school situation has been described socially as very serious disruptive behaviour, that is, it is trash, ugly, expensive, scattered in disordered of a social school area or representing a hazard to secondary pupils' health. (Elton Report, 1989; Reynolds and Cuttance, 1992). Further it was noted that littering remains one of the most neglected areas in a systematic research on behaviour in British secondary schools (see, for example, Elton Report 1989; p.14). Even so, littering behaviour is often analysed under different concepts (such as teacher-pupil interaction) than the chief concept in which it fits – "The concept of physical environment-human behaviour relationships" (see Altman, 1975). An attempt was thus made to investigate pupils attitudes towards and behaviour in relations to littering.

The result of this study was less supportive to littering persisting in the secondary schools. It also revealed a number of factors which both the sample pupils and teachers thought

would disrupt the smooth running of a schools and make pupils behave worse (see Tables 17, 18, 27, 28). The sample schools of the questionnaire study indicated more positive than negative attitudes towards very many litter bins which seem to suggest that littering does disrupt the friendly school community life. In emphasis, as for example, some of the pupil informants replied " ..... that's our trouble, we are forced to do litter duty; the litter we do not throw down, it is very unhygienic and a complete waste of time." These elements : the complaint behaviour of pupils seems to reflect health of pupil-teacher relationships and the time management problem as brought about by littering. The finding also seem to reflect that schools with littering problems will have more behaviour problems and this can seem the way problems increase in schools.

In addition, what the present study failed to identify are the most likely times of litter throwing and the individuals involved in throwing down litter and this was beyond the scope of the present analysis; but it would seem reasonable to conclude that forcing pupils to pick litter may not necessarily prevent people from throwing litter on the school ground. The effective technique, in my opinion, is most likely to be, as the findings seems to support, to provide or increase the number of litter bins in the most commonly littered areas of the school. This suggestion appears to fit very well with Skinner's (1953, 1974) theory of Operant Conditioning gives that behaviour can be changed through changing the environment in question. That is school should provide the environment that can discourage littering behaviour.

Decision-making

A useful finding (particularly as indicated by their comments; see also Tables 19/20) was that decision-making which involves both pupils and teachers is as likely to improve behaviour in secondary schools.

For example, in study two the pupils liked their school's dining hall because they / including staff said, it was designed by their teacher in consultation with the pupils.

Clearly it appears when decisions are made by the member who uses the place most, then they will function efficiently and behave well and respect it (as well as in respect of their own decision). In some ways it would seem that if the physical school environment conditions are imposed they will be obeyed. This finding is in agreement with the findings of Mortimore et. al. (1988) study on school matters in the junior years – They concluded that children behaved well and enjoyed working in an school environment being constructed as based on consultation with pupils themselves / teachers. Sckeerens (1992) has argued in support of this view that certain problems of school improvement remains in lack of joint decision-making. These findings in general appears to make the suggestion that shared decision making on material school environment has a positive effect on pupils behaviour and other acceptable function of the schools.

The School Uniform

The school uniform appears to have a meaning relating to discipline in school. For instance, in their comments on the importance of the school uniform for British secondary schools, Gordon and Lawton (1984) stated that the school uniform promotes unity and community life in the schools themselves. That is, the school uniform:

i) Removes social differences (poor and rich or in some ways white and black together).

ii) Promotes pride in membership of the school, high moral and corporate spirit.

iii) Prevents competition in dress, which competition could result into dislike of others or behaviour problems.

Gordon and Lawton (ibid.) also point out that the school uniform has a school approved mode of behaviour-suggestion that when a pupil puts on his/her uniform it is a symbolic acceptance of the school's authority. Or that when a pupil does not put on the uniform, then the school authority is threatened.

For this reason, an attempt was made to examine the pupils attitudes and behaviour in relation to school uniform. The secondary school teachers opinions were also investigated. The general findings were perhaps a little surprising in that most but not all the questionnaire responses (study 1) opposed the idea of the school uniform very strongly (see Tables 9 and 10). Interestingly, in fact, the pupils in the sample schools visited during the administration of the questionnaire were all found in their school uniforms. This daily wearing of uniform behaviour was confirmed by the observations study – No pupil was seen in their own clothes at the time of observation. They were all the time in the school uniform. But this is not to deny that in some schools it may be quiet a problem.

Also certain interesting issues arise in this analysis of uniform wearing behaviour. It should perhaps be noted, pupils put on uniform not necessarily for the reasons given above. A number of different things seem to determine why pupils wear their school uniform. For example during the interview study one of the pupil subjects commented (and was an answer to an extended interview question) that she liked the uniform because she could then avoid the problem of what to wear each day and reserved her more fashionable dresses for the weekends and the big occasions. Some pupils said they did put on their school uniform because the rules were very strict – suggesting that school rules when enforced with strictness may help to overcome certain disruptive acts.

Furthermore, it was found out that the teachers themselves do not seem to take uniform seriously (see Table 10). The reason for the teachers anti-school uniform wearing was not investigated. In this particular case, it may be argued that teachers are more likely to weaken insidiously the orderly and effective operation of a school.

The inclusion of the study of the physical school environments into the field of behavioural psychology in British secondary schools

Earlier, some of the literature reviewed suggested analysis of the relationship between the physical school environment and pupils behaviour (e.g. Elton Report, 1989; Coffield 1991, Wheldall, 1992; Dunham, 1992). In the present study this notion was specifically

examined. As can be seen in Table 19 and 20m, in the questionnaire analysis the idea of inclusion of the physical school environment into the field of behaviour management in secondary schools was acknowledged by most of the respondents. These findings were confirmed by the results of the interview study – Overall the respondents showed interest into writing research in this particular area: that is if they were given the opportunity. The emphasis given was that disruptive behaviour in pupils is partly due to the physical environment conditions. This is perhaps why the American School discipline psychologist have quite a number of strong reports of the physical school environment effect on pupils behaviour over the past 25 years or so.

Pupils like and dislike of school.

The notion that some pupils will like a school and others will completely dislike it was included in the present analysis. It was found out that this notion (like or dislike of school) means different things to different pupils. What is evident is the impact of different situational forces on pupils psychological state: that is, since the school environment demonstrates both perceived "good" and "poor" characteristics it is likely that pupils will like some aspects of a school and dislike others.

In his efforts to understand the developments of the human personality, Sigmund Freud (1933/ 65 / 1938) proposed what was, for his time, a revolutionary argument. His psycho-dynamic theory suggested that children's relationships with the family environment (with their parents) had a tremendous impact on their developing personality through the process of identification. Identification in this sense is the process by which a person internalises a set of attitudes or behaviour and characteristics exhibited by immediate / very close environment to the individual. Freud was particularly interested in the unique learning process through which children mould their egos (identity) after those of their family environment, particularly their parents. Through identification, Freud believed that children literally incorporate the personality of another person or characteristics of a situation into their own. According to Freud, for example, children

usually identify with their same-sex parents – rather than with the opposite sex parent, so identification leads children to incorporate the appropriate gender-role behaviour into their own identity systems. In school terms – the family environment refers to the whole-school environment. Mother and father figures represent factors within the school. Identification with the same-sex parent suggests the supportive environment. The rather opposite sex parent – suggests the supportive environment conditions. The appropriate gender role behaviour – referred here to appropriate or good accepted behaviour in school. Overall interpretation then would seem that most children or pupils will usually identify positively (demonstrate good behaviour) with their schools supportive environment for the appropriate setting-function, whilst in some ways the disruptive behaviour makes the response to the unsupportive situation,

This clearly does seem to reject the view that divides pupils into two separate groups as: a) those who like school and b) those who don't. Even the idea which claims that girls are more likely to like a school than boys (Jackson 1968). This may be true in some ways, since I did not gender differentiate in my analysis. But my point is that in my study there was evidence that even in a single sex school this expression of attitudes towards a school does exist. I even see no way how knowing girls-boys differences would contribute to the improvement in the conditions which exist in schools,

To emphasise the point, it seems reasonable to refer to Anna Freud's (1954) view point. According to Anna Freud, the child identifies with object of fear in a position of aggression. If a situation (such as cold) is seen by the young person (pupil in my case) as being threatening a possible defensive reaction is to identify with the threatening situation. Thus it may be argued that the most likely explanation for this notion lies in the pupils themselves and they are always there willing to give the explanation if purely 'clinical' understanding is required.

Teachers' Judgments of Pupils' Psychological State

Earlier in the literature review, particularly Chapter 3, it was noted that many writers (e.g. Taylor,1981; Robertson, 1981; Tattum, 1986) suggest that judgment by the teachers of pupils' psychological conducts are reliable and accurate. This view was used to explore whether teachers are already aware of the relationship between the school physical environment- pupils' behaviour and could give a clear picture of this relationship. Unfortunately, the present study does not provide any evidence that accepts teachers judgment as absolutely accurate without challenge. In other words, it was not the case that judgment by teachers of pupils attitude / behaviour were completely accurate. For example in the study of pupils attitudes towards their school – the sample teachers responses indicated a total positive pupils attitude towards school (see Table 8). But comparing this with the pupils own responses. I was left in a state of confusion. As can be seen in Table 7, a remarkable pupils expressed negative attitudes and even many remained undecided. These findings were confirmed by the results of the interview study – where at several points the sample teachers express the phrase: "I don't know; you had better ask the pupils". This can seem to indicate that teachers are either not sure or don't know 'certain' feelings/behaviour of their pupils. It should be noted the phrase 'certain' has been used here (in this particular case) to mean that at some points there were degree of similarities in responses (perception) of both the subject teachers and pupils.

From this critical empirical evidence about the question of teachers clarity of judgment of pupil's psychological dynamics, it would seem reasonable to argue that it is significant in the school situation to use both teachers and pupils at the same time in order to obtain a little more reliable information. Or, because now there seems to be endless conflicting issues involved in teachers judgments – perhaps there is no need to introduce a system which will allow every individual pupils to be attached to a personal psychologist (like everyone else in this country has personal medical doctor). This psychologist will then

try to deal with a pupils psychological contrasts, general behaviour health supervision and give advice.

The Physical School Environment-Teachers' Perception/Attitude Links

It was found out in the present study that the physical school environment also has an effect upon the secondary school teachers. The sample teachers , almost all, gave a very critical view of their school's physical environment characteristics. As Table 14 shows, the teachers felt dissatisfaction with certain conditions of their school's physical set-up. They felt that it is sometimes the physical school environment conditions that put them under stress, rather not necessarily or only their pupils behaviour (see Table 28). A similar view has been offered by Lemlech (1988) who argues that the arrangement of room environment and material resources may provide support or challenge the teacher's classroom management styles. This teacher style – the physical school environment issue has also been ably supported by Dunham (1992) who has argued that teacher style of behaviour management cannot be cannot be effective without support from the physical classroom arrangement.

Hearing all these it may be, then, said, should behaviour problems arise with reference to a particular physical school environment condition (such as inadequate learning resources), teachers need not to blame, rather the blame should go to the practical condition of the environment.

Smoking Behaviour

In the present empirical study some 'diagnostic' information arise indicating the pupil's with smoking behaviour. In their comments (of questionnaire responses) on what constitutes a dirty toilet the pupils respondents in particular reported among other things cigarette ends. It seems, thus, sometimes pupils go to the toilets to involve themselves in disruptive activities. As smoking makes one of the disruptive behaviour in schools (West, 1982; Docking, 1987; Kauffman, 1989). Therefore, by way of suggestion – pupils

require regular supervision on the way to and in the toilet area. (It should be noted, the medical term 'diagnostic' is used here to mean that the pupils; difficulties of behaviour arise entirely out of problems with the pupils themselves. – References Bartol and Bartol, 1986).

Unauthorised things pupils bring to school

Another analytic issue that emerges from this study which seems to also create disruptive behaviour problems in the secondary schools are the unauthorised (or unnecessary) material (things) brought into the school area by the pupils themselves, such as chewing gum, walkman music systems, lipsticks, whistles or water pistols. It is apparent from the project's findings that these things weaken pupils' attention especially when they turn to use it during lesson. I would suggest here that there should be a kind of school regulation to deal with the manner.

RECOMMENDATIONS

Although a number of recommendations have already been made at several points in the foregoing discussions, it seems sensible to provide a more conclusive and succinct ones. Moreover they have risen out of the data gathered form this project. If they are followed, should result in not only a better understanding of link between the physical school environment and pupils behaviour in secondary schools. In addition it should be noted, the recommendations are divided into two sections: i)that mainly was extracted from a list of comments made by the respondents during the questionnaire/interview study, and ii) that the present researcher try to give as a result of the general evidence obtained from the literature and empirical analysis.

Recommendations from the view point of the respondents:

Both the pupil and teacher informants felt that there are many way to deal with behaviour in school. They suggest suitable lighting and heating conditions as important in this case.

In that it will enable pupils to give more attention to doing the acceptable school / classroom activities rather than be involved in disruptive acts such as moving around in the classroom, the lack of co-operation or attention during the lesson (see Tables 27 and 28)

The informants felt that some of the disruptive behaviour in the schools reflected the class size: behaviour, thus, would be worse in classes with large numbers of pupils, possible because, as the present findings show, teachers would have less opportunity to deal with individual problems. To be more specific the pupils felt that teachers could give more attention to them if the class sizes were smaller (see Table 27). The teachers acknowledged this – saying that pupils could be dealt with much more effectively when the class size were smaller (see also Tables 20 and 28).

Carpeting: – The respondents recommended that schoolrooms be carpeted. Reasoning that uncarpeted classrooms result in an increase in noise levels. For them, noise remains an important factor in their quest for managing behaviour in school.

Thus, carpeting is, then, seen as one of the solutions to the pressure and problems of noise faced by some schools / classrooms. For example, it may prevent interference by one class with other classes through noise.

Furniture fitting ;- The informants felt that comfortable furniture fitting would be useful too in reducing disruptive behaviour problems in school. That pupils cannot concentrate on classroom work if the chairs or desks were rather uncomfortable. Instead, they either move around in search of a better chair / desks or sit on anything with them or complain. This can seem to pose a problem because it moves the pupils focus of interaction away from the teacher and it is time wasting, and disruptive in an instructional programme. Comfortable furniture, it seems from the present findings, can pull pupils together to the positive work behaviour. In the same line, comfortable furniture would be helpful in that the pupil who runs aimlessly can be contained in the classroom if the furniture is used to restrict his / her running.

Recommendation in view of the general out come of this study:

An attempt to evaluate pupils' behaviour in relation to factors within school not only be based on pupil-pupil or teacher-pupil relations but also the physical school environment conditions. Pupils' behaviour links with the school physical environment may not have been critical years ago, but according to the present empirical evidence today's pupils, as well as teachers expect a comfortable and attractive place to work.

Use of areas of the school building(s) or equipment should be reviewed regularly to ensure it is being used to its best possible advantage. This is clearly stated in the 1988 Education Reform Act, that monitoring / evaluation of school associated conditions should be a priority in order to identify and tackle problems before they become worse. If these are already existing in schools, they should be taken seriously.

Attention should be given to the functional deficiencies of many schools physical settings. Some of these deficiencies are due to over-crowding others are characteristics of building which are totally unsuitable or inadequate; the deficiencies from material resources, all these affect adversely the secondary pupils' standard of behaviour. (That is to what extent are the building and the site sage and clean? What arrangement of the physical environment does the school have for making its site and buildings stimulating / interesting or encouraging). In addition, more schools should be building to reduce overcrowding.

Attention to adequate and clean toilets are no less essential (see Tables 11, 12, 27, 28). Siting class bases near the toilet areas will make it easier for pupils who have toilet problems. There should also be school staff specifically to deal with toilet issues.

Split site of schools not only impinges on lesson time, but pupils actually suffer from cold and rain as they walk between buildings. It is therefore recommended here that schools with split sites should try to offer covered ways between the buildings.

The Elton Report recommended that 'those bodies with responsibility for buildings should ensure that school buildings are designed with durability (consistent with attractiveness), ease of maintenance, avoidance of circulation bottlenecks and good sight lines for the supervision of pupils in mind (ibid. 1989: p117). In addition to this the present evidence suggests attention to the movement of pupils around the school area are no less daily / timely supervisions. Because disruptive behaviour problems can cover a wide range of behaviours which affect different pupils at different times: e.g. littering, smoking or graffiti writing.

The present evidence indicated that both teachers and pupils regard sports as a very important school activity. In fact, it was noted that inadequate provision for sports facilities involved the pupils in bullying behaviour and including disrespect for their teachers. Therefore it is recommended that due provision should be made in all, secondary schools for sports requirements.

The Elton Report (1989) states that head teachers and teachers should recognise the importance of displaying pupils work in creating an attractive environment, increasing pupils' self esteem and fostering a sense of ownership of the premises. The present empirical evidence endorses this recommendation. For example, the sample school observed had encourage pupils to good learning activities and behaviour through a display of their work.

The Elton Report (1989) also recommended that those bodies with responsibility for supervision of school staff should include the removal of graffiti the duties of caretaking staff. To stress this recommendation it further suggested here that more demands should be made on the pupils to stop graffiti writing behaviour and rather the pupils should bring outside the opinion they would usually express using graffiti communication system. Pupils should be made to discuss their feelings freely with their teachers or personally attached education psychology. In fact according to the Elton Report (ibid.) graffiti behaviour must be treated as a very serious offence in school discipline.

To promote tidiness behaviour or co-operation of pupils in terms of tidiness provision of sufficient storage space will be useful. As stone (1990) points out, there is no doubt the pupils will be less disruptive in a tidy, well organised school than they will be in one which is messed with possibly individual pupil properties.

To encourage good behaviour in secondary pupils, the school rules should be enforced with intensity. It was noted in the present study that school rules can stop pupils negative attitudes form becoming behaviour (see Table 28). Rules define the boundaries for behaviour within a classroom / school as a whole (see Tattum 1982; The 1988 Education Reform Act; Elton 1989; DFE 1993). They are in effect the formal statement of the school's expectations about what pupils may and may not do. In other words, as Smith and Leslett (1993) point out, pupils invariably may spend some time discovering and testing schools rules. They may want to find out how far they can go and the less specific and convincing the teacher the more they explore the boundaries of what they suspect to be permissible. Thus, rules should be enforce at dynamic level.

There is urgent need to involve parents in enforcing school rules in their children. Such parents should be given a list of the school rules at the beginning of the academic year. Parents who are on the side of school are more likely to succeed. This is clear from the present empirical evidence: for example, it was noted that some of the pupils in the sample school tended to come to school as a result of obedience to their parents.

It is also recommended here that analysis of pupils' behaviour be reported factually in order to enable teachers to know what to do in the case of treatment. And what conditions engage pupils in certain specific behaviour. HMCIS (1993) clearly strongly supports this direction of analysis (ibid. p7).

I reaffirm the value of the philosophy of formal education as a protective force to use in the practical school life (Plato, 1941, 1949; Dewey, 1916, Peters, 1966). Because neglect of it seems to associate schools with ineffectiveness or negative effect on pupils behaviour

(according to the present empirical evidence) and poor academic out-come (according to the HMI Reports – 1988-1991).

One of the most important problems in school is the question of littering behaviour. In the present study if found that littering increase disruptive behaviour. In some of the sample schools difficulties in pupil-teacher relationships were linked with litter picking. Some of the sample pupils expressed concern that litter picking is problematic to their health. It has connection with time wasting (Elton Report 1989; Reynolds and Cuttance, 1992). Therefore, it is recommended that there should be as many litter bins as possible around the school area. Both headteachers and teacher should ensure that litter-free rule is enforced. Also litter picking should be included in the duties of the caretaker.

Concerning reasonable maintenance and interior decoration, the present findings suggest that if an environment is cared for and well maintained, pupils will make efforts to look after it. There was evidence that well maintained physical environments such as buildings, interior decoration, high quality visual displays, strong/comfortable furniture encourage good behaviour in pupils. On the other hand, where walls are graffiti-covered, furniture uncomfortable, it becomes difficult to encourage good behaviour.

The findings of this study indicate that different curriculum areas require different kinds of materials and classroom furniture, including its spatial arrangement, as each curriculum area leads to variations in pupils' behaviour. It is therefore recommended that when considering ways of preventing disruptive behaviour in classrooms the requirements of individual curriculum areas should be taken into account.

Also the findings of this study indicate that noise contributes to dissatisfaction with school – from the point of view of both teachers/pupils; and it contributes to disruptive pupils' behaviour, in particular it disrupts pupils' attention and teachers' focus during lessons. The findings also showed that some of the sample schools were located in noisy areas. As such, it is recommended that noise absorbent or preventative material such as backed vinyl on the walls should be provided to all the schools in noisy areas.

Also, the findings of this study indicate that some school activities, such as sports, involved pupils in crossing the roads near by the school; and on some of the roads there is no pedestrian crossing. Although no accident was noted at the time of this study, for safety reasons it is recommended that pedestrian-crossings should be provided on the roads around the school.

Finally, provision of material resources for teaching / learning, furniture, sports, facilities or any improvement of the physical school environment in general should be based on views of the teachers as well as pupils. They are the users and they know their needs. In fact, both the sample pupils and teachers in this study (as already noted earlier) make it clear that they could play a more significant role as users in defining effective school environment.

CHAPTER 11

CONCLUSION

> "... the physical aspects of the setting. From the perspective of order, one can easily imagine how furniture arrangements (e.g. tables or booths in art and laboratory room vs conventional desks), and room dividers (e.g. bookcases, filing cabinets) could affect the density of students, opportunities for interaction, and the visibility of behaviour. Similarly, glare from overhead projects or light through a window could well create blind spots for a teacher and thus interfere with monitoring classroom behaviour. Unfortunately, only a limited amount of systematic inquiry has been done in this area of classroom management."
>
> (Wittrock, 1986:p.402)

The results appear to have the same face validity and it is consistent with the widely used psychological theories (by Freud, 1893, 1965; Lewin, 1951; Skinner, 1953, 1974; Barker, 1968). Most of all the psychological theories reviewed is Anderson's (1981) which recognises the element of attitude. Some conclusions from multi-dimensional research that touch on similar concepts in this country (UK) and elsewhere, and could therefore serve as a framework to inform those responsible for the management of the schools'/pupils' behaviour and future research. As such, it represents an interesting and potentially useful outcome from this exploratory study and can be summarised thus:

1. The findings of the study agreed with HMI (1988-1991) judgment of the characteristics of the physical school environment. The survey of 30 HMI reports and they show two characteristics of the physical school environment: 1) those judged good characteristics, such as satisfactory teaching/learning equipments, reasonable heating/lighting, clean toilets, comfortable/strong furniture, high quality of visual display, low level of noise, adequate space, well maintained building/interior, satisfactory sports facilities, reasonable class size, covered walk way between buildings, carpeted floors; and 2) the poor physical school environment charac-

teristics such as poor provision of teaching and learning equipments, poor heating and lighting, unclean toilets, poor display of pupils' work, shortage of sports facilities, unsatisfactory furnishing, unpleasant site/building, high noise level, crowding, leaking roofs, litter, graffiti, shortage of storage space, slippery classroom floors, shortage of specialist subject rooms. These characteristics, particularly the poor, are not consistent with some aims of education, specifically not appropriate to the view that the school education should always seek to provide the good and beautiful. When we consider the unsatisfactory elements reported by both the pupils and teachers, we be surprised not that the elements are so few but that an inconsistent situation is reported at all. Not only do schools tend to differ in this respect, but most schools have among their classrooms some horrifying physical arrangement conditions: such as crowded or inadequate learning and teaching material resources or uncomfortable chairs/desks. The correct interpretation of such findings, then, is that school is running out of system; and, in fact, at this point I am tempted to ask the question for which educational governors and research grants are paid?

2. The suggestion generally held in the literature of the 1980s and today (HMI, 1987; Elton Report, 1989; Coffield, 1991; DFE, 1993; Charlton and David, 1993; HMCIS, 1993; Robinson and Maines, 1994) on behaviour management in secondary school is that the physical school environment needs to receive particular attention as part of the management strategy. However, as criticised earlier, this suggestion has been made without systematic empirical attention. This study attempted to establish this connection (link). In terms of the general psychological state of the pupils, overall, the results show the physical school environment characteristics as a highly important part of what engages pupils in different attitudes and behaviour.

The inappropriate characteristics of the physical school environment were disruptive: e.g. undecorated older school buildings/dirty toilets were stressful; and in some situations disruptive behaviours were 'fighting' in the front line, that is to say, as a way of challenging unsupportive situations in school: e.g. lack of learning material resources made unauthorised moving around the class, cold rooms/uncomfortable furniture fittings made pupils unsettled and reject their teacher's authority; lack of storage engages the pupils in untidy behaviour; noise was disturbance in the maintenance of complete attention to accepted classroom work.

On the positive side, carpeted classrooms were felt as friendly, as well as a solution to decreasing unnecessary noise level/disruptive behaviour; decoration or freshly painted school buildings were regarded as relieving stress/ promoting good behaviour; and adequate learning material resources/comfortable furniture fittings were good conditions to the pupils for settling down to concentrate on the acceptable classroom activity. According to these findings, it is not only the fault of the parents or peers or teachers that pupils engage in disruptive behaviour. It is partly because some of the physical school setting conditions present a threat (Anna Freud, 1958) and need to be changed (Skinner, 1953, 1974).

The Rutter et al (1979) study showed that the link between the physical school environment-school behaviour was statistically insignificant. This particular conclusion has been a strong one in Great Britain and the present evidence argues that it needs to be considered carefully. The present findings describe it as a conclusion drawn with very little evidence of the characteristics of the physical school environment and should be used with caution for dealing with behaviour in all secondary schools in the country. Anyway, the study is too old to depend on. In fact, Rutter et al did not consider that stress is wholly a bad thing in the smooth running of the school (Dunham, 1992). Also, in this particular conclusion, they in

some ways depart from the idea of a whole school approach (or the question of what should constitute a good school). Also, they were generalising on findings on only one LEA area, and, at least the present study, though the sample schools are only three, is based on two LEA areas. The present data should alleviate those in dilemma.

3. It is encouraging to record the consistency of this project's findings with the ideas contained in the international literature such as of the United States of America (e.g. Sommer, 1969; Deasy, 1974; Baum and Valins, 1977; Gump and Adelberg, 1978), which emphasises the importance of the perceived good physical school environment in maintaining and encouraging the perceived good behaviour in pupils. The studies also provide information on some ways certain behaviours of pupils relate to the school physical environment. All of these find relevance in this project's findings. However, it cannot be said that Americans have superior positions in this area because their studies, in the main, report on the effect upon pupils' behaviour of single elements such as furniture, heating, lighting, litter, noise or crowding and not necessarily regarding these factors as components of one concept, the physical school environment, such as Lewin (1951), Barker (1968). Quite often they tend to analyse these elements without reference to theories. Therefore, in a real sense, it is this concluding (British) analysis to recognise as the one which brought the subject to its fuller sense.

4. British documentation – The official documents which apply most directly to the relationship between the physical school environment and secondary school pupils' behaviour cited are HMI (1987) and Elton Report (1989). As mentioned above, a large number of the HMI Reports (1988-1991) on individual secondary school conditions were also cited. It proved useful in that it provided the definition of the characteristics of the physical school environment. Some relevant points were cited

in Education Act (1944); Educational Reform Act (1988); DFE (1993) and HMCIS (1993). Here this concluding study finds its strongest support and the documents, in fact, invite empirical study.

Finally, three useful documents which cover the whole range of relevant issues concerning the school life and therefore point out relational role play by the physical school environment – these documents are: *A Dictionary of Education* by Rowntree (1981), *A Guide to English Educational Terms* by Gordon and Lawton (1984) and the book edited by Entwistle (1990) entitled the *Handbook of Educational Ideas and Practices*. All of these added to the deep need to explore the relationship between the physical school environment conditions and pupils' behaviour.

5. The idea that the physical school environment influences upon pupils' behaviour and should be included in the field of behaviour management in secondary schools was welcomed by both the teachers and pupils. In fact, they were very co-operative in this project.

6. The first part of the field analysis provided patterns of attitude: favourable and unfavourable. As such, then selected theories and previous field studies of attitude-behaviour consistency were reviewed in brief (e.g. La Piere, 1934; Allport, 1935; Heider, 1944, 1958; Festinger, 1957; Fishbein and Ajzen, 1975; Anderson, 1981), with a view that it would help me to predict behaviour. Instead, it produced a major dilemma and which became the base of the second field study. It has now become clear from the data, and the relevant literature reflected on, that actually no absolute consistency exists at all between attitude and behaviour; at least, in so far as the physical school environment factors are concerned, that has been the case. The data indicated a complex picture: as a set of behaviour all referencing a single attitude or an attitude remained just simply as attitude itself or an attitude and behaviour agree on a specific situation. The data showed the attitude-behaviour

consistency approach rather worthless for identifying clearly behaviour that needs 'clinical' attention (treatment) or be further encouraged. This is not to minimise their importance, but because they are a separate topic (concept), they require separate examination.

7. The common theme of education research (Husen and Postlethwaite, 1985) that often divide pupils into two separate groups: 'liking' and 'disliking' for the school was specifically analysed. It should be remembered that the present data discovered no such thing, as some pupils completely liked the school and others do not completely like the school. What is clear is that these expressions have specific meanings to the users. Pupils' appear to use these phrases to express favourable or unfavourable attitudes towards specific conditions of a particular factor within the school environment. These factors include a range of things such as teachers, discipline of other pupils, physical school environment characteristics or academic performance standards. The data, thus, suggests that the more helpful approach to this viewpoint should be to examine the question: 'What makes pupils say "I like the school" or "I dislike the school"?' Analysing such a question can help not only to understand the pupils' needs, but also what is missing in the school.

8. At several points in the previous chapters of this thesis, level of disruptive behaviour differences between schools was briefly touched on. There is now evidence from the present data that characteristics of the physical school environment can be used to determine some differences between school of levels of disruptive behaviour. The threat, of course, is, as noted above, that schools differ in their physical environment conditions. For example, some schools have comfortable furniture and others the opposite. As such, the analysis revealed that the schools with poorer physical setting conditions have more problems of disruptive behaviour. A similar case applies to behavioural differences between classrooms within a school, that

is, classrooms with the good physical setting condition experience less disruptive behaviour problems. In fact, this has been the case reported of pupil-pupil/teacher-pupil relationship (Bandura, 1977; Elton Report, 1989; Charlton and David, 1993). Such findings suggest that no one single 'discipline' policy will have similar effects on behaviour in all secondary schools, and if only all schools have uniform conditions, and this can seem the myth.

9. The study revealed that certain physical school environment conditions only affect a single pupil or a few out of a large class, suggesting that individual pupils need to be considered. There was evidence that in a large class some pupils could not receive attention of their teachers. In considering the effect of similar size of chairs in classrooms, since pupils vary in their weight and height, the results showed different effect on the pupil: that is, the short pupils had the problem of sitting inappropriately. We appear to suggest that for the taller pupils would face a similar problem: perhaps carrying desks on their knees. As well as those with heavy weight might result in breakdown of the very weak chairs. The point is that a pupil who has a very uncomfortable sitting condition tends to be less co-operative because discomfort tends to interfere with his/her attention (co-operation). This particular finding contrasts strikingly with Barker's (1968) theory of ecological psychology, because the theory mainly emphasises that the environmental influences should be judged as based on a large group.

10. Most studies of secondary pupils' behaviour (Taylor, 1981; Tattum, 1982; McManus, 1989) demonstrate that there is lack of clarity in definition of behaviour (including terms used such as problem behaviour, delinquency, aggressive behaviour, unwanted behaviour, undesired behaviour, undisciplined, deviant behaviour) in the school and that this is so because behaviour defined disruptive in one classroom may be accepted as "good" in another. The present study discovered some explanations for this complex. That is, room arrangements for promoting

specific subject areas were found to engage pupils in different behaviour. Put it another way, behaviour that promotes learning in one subject area may be disruptive to others: say noise may encourage music learning, but disrupts reading or attention to the teacher. The point is that we should define behaviour where it specifically occurs and with activities required by that specific setting in mind. This discovery was not present in the literature and previous research on management of disruptive behaviour in schools.

11. The assumption that teachers have well defined ideas of pupils' psychological states and that they can identify the pupils with disruptive behaviour in their school/classes without difficulty is not strictly true (Robertson, 1981; Taylor, 1981; Tattum, 1986; Elton Report, 1989; Wheldall, 1992). Teachers have no full knowledge/accuracy, at all, in defining pupils' attitudes or behaviour. Overall, teachers in this study were found to hold complex views, and were found to be unaware of certain issues concerning their pupils' attitude/behaviour links with the physical school environment. In other words, although there are certain attitudes/behaviour which they tend to predict correctly, others say the opposite to it, and they do not know how their pupils respond to certain conditions – yet the pupils themselves know all these. Also, some of the behaviour such as graffiti or littering are displayed in hidden areas – teachers cannot know exactly the pupils who engage in them. It seems clear from this, that we should have procedures which examine both the pupils' and teachers' perception of factors within schools, such as the physical school environment characteristics, when wanting to understand pupils' behaviour and the whole school life, and also, to evaluate a situation in terms of its factual consequences as suggested by HMCIS (1993) and Hewstone (1993). Or perhaps it is time to introduce a new dimension such as making each pupil have his/her personal behavioural specialist, in addition to the teachers (this dimension has been successful in medical "discipline").

12. Although a great degree of pupils' behaviour appears to reflect the environmental factors within school itself, the analysis also shows that certain behaviour which disrupts the smooth running of the school are in the pupils' themselves. Such behaviour includes: smoking, lipstick use during lesson, water gun use, Walkman music system use during lessons, or gum chewing.

13. It seems reasonable to note here that everywhere in Great Britain the cities are expanding and, in general, population increasing, but no new school building. The importance through which this note appears relevant to the present analysis is that both the pupils and teachers emphasised the need to reduce the class size.

14. It has been recognised for some time (Watkins and Wagner, 1987; Galvin et al, 1990; Charlton and David, 1993) that it is up to the teacher to influence the environment in which they work (sometimes referred to as 'situational management'). The trouble with this recognition is that there may be limitations on power/responsibility of teachers, they may find other environmental issues difficult to handle. The data from this study shows that, although a teacher can satisfy some of the physical classroom conditions such as seating layout, displays of pupils' work, help with pencils/erasers/pens and paper, playground rules, keeping pupils away from highways and motorways, reporting immediate items which need repair or replacement; actually other important needs such as carpeting rooms, decorating in terms of painting walls, location of toilets and classroom size, provision of adequate and appropriate teaching/learning equipment (resources), repair of buildings, accessibility or replacement of desks/chairs/book cases/storages, covered walk ways, provision of sports facilities, can only be adequately improved by the educational authority concerned. In fact, the present findings show that there are a great many teachers under stress as being a result of rather difficult situations of physical school environment aspects as they relate to some behaviour of pupils. For example, it was noted that inadequate play facilities made it difficult for the

sports teacher to decide what action to take against pupils who present bullying, disruptive behaviours as a way of seeking play opportunities. On the positive side, carpeted schoolrooms made a good impression on the teachers. It is clear that attention to this dimension is one of greatest importance.

15. School rules seem to indicate pupils' sense of obedience to the school culture; that is, living by the accepted way of the school life. The present data showed that systematic rule enforcement is extremely useful, in a complete picture of behaviour management in school. There was evidence that some pupils in the study wear uniform because the school uniform rules were very strict. Every pupil had to observe the rule. Therefore, it is recommended further that those who deal with pupils' behaviour on a day to day basis should see that pupils do not get away with school rules. In fact, after reviewing a large body of research on conformity to the school rules, Smith and Laslett (1993), and Charlton and David (1993), argue that rules on their own had little effect – enforcement is the principle (essential).

16. It became clear in the analysis of my data and the literature that parents who do not agree with school rules are likely to lay the foundation of disruptive behaviour in their children. The data revealed that children do identify with the views of their parents. That is, pupils who did not like their school came to the school because their parents force them, which suggests that if parents do not identify with the school, the values of the school are likely to be rejected by their children and the task of the school teacher made more difficult. This view is echoed in many books on educational psychology (HMI, 1987; Docking, 1987; Elton Report, 1989; Charlton and David, 1993; DFE, 1993; HMCIS, 1993). This knowledge ensures that parents of pupils who cause unnecessary disruption should, therefore, be made aware of their responsibilities and accountable for their children's behaviour in school. The findings also endorse the suggestion made by Wheldall (1992) that effective links between the home and the school and a working partnership between

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parents and teachers would be of the utmost importance in helping to identify what involves pupils in disruptive acts in school. Closer links between schools and parents would also assist with the inculcation of good behaviour in pupils.

17. The data showed that both pupils and teachers were generally aware that they were excluded from decision-making processes that shape the physical school forms of the school environment. The data identifies that pupils sometimes suffer as a result of the 'imposed' unsupportive conditions and this in some ways tends to contribute to the problem of disruptive behaviour itself. It predicts that designers and planners do not design for the future, nor give attention to the needs of everyday users of the physical school setting. This complaint is very well defined in the work by Sommer (1976). He argues, for example, that the job of the architect is to create beautiful buildings; that is all (ibid: p.4). Sommer, however, has not defined the term 'beautiful'. In my view, this 'beautiful' should refer to the purpose of the setting. In school terms, for example, as noted earlier (NUT, 1992), pupils found themselves in unhappy situations as they queue to use an outside toilet: what if it is raining or too cold? It seems that pupils recognise and behave good in a place which may be designed in consultation with them. These data revealed that design in consultation with pupils/teachers promoted pride/happiness/good behaviour in pupils and the finding which indicated this behaviour was of the dining hall, which was designed by the Fine Art teacher in collaboration with the pupils themselves. It seems reasonable to recommend here that there is now a need to establish links between architects and teachers/pupils, for decision making in order to create those physical school environments that attempts to reflect the purpose or the needs of users.

18. Throughout this study, the term behaviour has been used to denote the acts or actions which a pupil actually performs and responds to a situation (Watson, 1924). Two categories of pupils' behaviour were distinguished (Elton Report, 1989; HMCIS, 1993): 1) perceived good, and 2) perceived disruptive. The 'good

behaviour', thus, signify acts or actions of a pupil which are accepted by the school as promoting the smooth running of the school: It involves complying with the school rules, obedience to the teachers, concentration on school work, friendly conduct with others, protection of school property. 'Disruptive behaviour' includes acts or actions of a pupil which would appear problematic, inappropriate, disturbing to teachers or obstructive to the smooth running of the school: it involves getting out of seat without permission, lateness, hindering other children, talking without permission, running in the corridors, damage to school property, littering, graffiti, physical aggression/verbal abuse towards teachers, loitering in prohibited school areas, bullying, fighting, stealing, smoking, refusal to work, inattentiveness or disturbing other pupils during work. It is a pity, both of these behavioural categories have to exist in school and seem a measurable thing, because healthy relationships/meaningful learning are rather the outcome of the good aspects of the behaviour (HMI, 1987).

19. I note in the study that when psychologists consider the influences of the physical school environment upon human behaviour, they usually employ the phrase "environmental psychology" (Altman, 1975; Heimstra and McFarling, 1979; Bell et al, 1992). Taking the term "environment" as to mean that which surrounds (Altman, 1975; Coffield, 1991). Thus, "environmental psychology" should include both: 1) physical surroundings and its characteristics; and 2) social context and its interaction (that is to say, socially, people can be influenced directly or indirectly by others); rather than as a single topic area within psychology. In other words, 'environmental psychology' should be treated as a branch of psychology which is concerned with how human behaviour is influenced by the sociophysical surroundings. As can be seen, the term 'sociophysical' has a qualifier appended such that precisely what it is that surrounds is clear, and both of the components (the physical and social) of the concept 'environmental psychology' have to have such labels for distinguishing them from each other and for explaining precisely how they operate.

It should be pointed out that the present study investigated specifically the physical dimension; and has created a new more relevant label for it as: 'physico-environmental psychology'. To write this in full: 'physico-environmental psychology' is part of environmental psychology which specifically studies the interrelationship between behaviour and physical environment.

20. In the project, the term physical environment denotes everything physical, which includes air, that surrounds a person. In terms of school it includes, for example, rulers, books, buildings, toilets, sports facilities/field, carpeted floor, chairs, desks, signposts, geographical location of the school, site of the school, uniform, class size, teaching/learning material resources, litter bins, display of pupils' work, decoration, storages, corridors, stairs, heating, lighting, noise, space, library resources.

21. Below is a list of factors which the research findings indicate have some considerable influence upon pupils' "like" and "dislike" attitudes towards the school. Although the purpose of the present research was not to deal with all of these influences, they may provide a basis for future researchers. They are, I think, all important to help understand behaviour in school. There needs to be careful thought about their operational links with each other and this might shed more light on understanding pupils' behaviour.

    - The physical school environment;
    - Teachers;
    - Examination results;
    - Other pupils' obedience.

22. It should be noted that some features come up in more than one concluding statement. This is because they interconnect with several aspects of school life, and this shows how school factors may function as a team.

23. Methods used: Although the questionnaire method proved particularly less useful for understanding the link between the physical school environment and pupils' behaviour, in general all the methods used contributed a great deal to giving a very complex picture of the links (both positive and negative). In other words, they support the view that the physical school environment characteristics are influential on pupils' behaviour. In all, the methods were: questionnaire, observation and interview. These three methods (in all) also made it possible to recommend at several stages in the prediction of the data. They could be adapted and redesigned as a diagnostic to assist schools to engage in self- review and improvement. This diagnostic would also focus on, and seek to improve, physical settings, behaviour management processes, and structure, with the ultimate aim of improving the school's overall effectiveness. In order to produce a reliable and effective diagnostic tool, it would probably be necessary to mount a short development project to re-design the existing instruments and trial them with a group of secondary schools. The outcome would be a diagnostic took, together with some suggestions for its application, which could then be made available to schools and teacher training institutions.

24. Finally, the present project was an exploratory study based on a sample of 3 self-nominated schools in the north of England. It seems to have produced instructive data with practical import. The fact that the percent scores and factual data produced differences in pupils' responses and some wide variation between several of the schools in the sample (including classrooms within a school), supports the view that the instruments were using criteria which tap important dimensions of effective behaviour management areas in school, and, hence, increase the likelihood that the instruments and the findings are valid. However, to reach a better understanding of the relationship between the pupils' behaviour and physical environment of schools in Britain, further study will be necessary:

- This would involve a design based upon a random sample of secondary schools and using the instruments used in the present study. As part of such a project, because gender differences have not yet been investigated, attention could be given to gender differences in response to the physical school environment characteristics.

- The findings of this study revealed only limited information concerning attitudes of the teachers to the physical school environment conditions; and the related behaviour of the teachers have not yet been explored. It would be valuable to research this area and in particular to examine the effect upon teachers' behaviour of the physical environment of specific subject rooms in secondary schools.

- The data were not collected in a form suited to understand the differences between urban and rural secondary schools. It would be useful to conduct further research with a view to comparing related information.

- In addition, the findings of this study indicate that different curriculum areas require different kinds of materials and classroom furniture, including its spatial arrangement; and as such each curriculum area leads to variations in pupils' behaviour. The effects of the conditions of the physical environment on pupils' behaviour and the way this varies between curriculum areas has not yet been investigated and further research will, no doubt, shed more light on this issue. In this way, the findings of the present study could thus be developed and validated.

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APPENDIX 1

What makes disruptive behaviour in school appear unique and require multi-dimensional approaches?

The following comments are considered important in the present survey in the making of a definition of disruptive behaviour in school (DBS) appear unique and also suggests that multi-dimensional judgments be involved in perception of pupils' behaviour (preferably recognising the importance of eliminating possible school contributions to disruptive pupils' behaviour before labelling the pupils as disruptive):

1. Why do teachers identify different behaviours and different children as disruptive? To answer this question I refer to Aristotle (384-322 B.C.), a Greek philosopher who wrote the first textbook on psychology (*De Anima*) and developed the basic doctrines of association. Aristotle said that there is no rationality in human society — by this he means no one is psychologically perfect; and that the help of any society will depend on the quality of responsibility within the society itself. Thus, pupils whose behaviours are associated with good or bad practice is a matter of degree. In other words, different pupils would display more of one or both behaviours depending on the situation in which a child may find him/herself.

2. Why some behaviours may constitute a disruptive behaviour in one classroom context and not in another? Watkins and Wagner (1987) described a case in which a student was allowed to sing in the Music room and the same student's singing in the Art room was usually reprimanded by the teachers. That is, actions which appear to be quite similar are reacted to quite differently by teachers when performed by different students at different times or in different contexts (Metz, 1978; Pittman, 1985). The argument here is that this differential treatment does not necessarily occur because of teacher incompetence or even in consistency but

rather because of the differential consequences of actions in the behaviour stream of classrooms (Hargreaves et al, 1975). In other words, the discrete actions of the same form are not the same if they have (or are perceived to have) very different circumstances. According to this view disruptive behaviour is the behaviour which occurs at the wrong place or time.

3. There is also the question that some students behave differently with different teachers, some pupils are disruptive only with certain teachers. For, although it may be the case that different pupils may perceive different teachers to be ineffective on specified occasions (Scheerens, 1992), there are studies which fall in this category of teachers' themselves being disruptive. Lacey's (1970) Socio-logical Study on classroom interaction in an exclusive northern boys' grammar school showed that how teachers' attitudes can be based not on the quality of pupils' actual behaviour but on whether in matters to do with physical appearance, health and the pupils' interest, pupils' characteristics matched those of the staff. Thus, in observing the class of an English master who also taught Music, one boy called Cready, a diligent member of the school choir, could make mistakes and receive no reprimand. In contrast, Priestley, a nervous fat boy who suffered ridicule from his classmates was reprimanded by the teacher for his errors. Lacey comments how the response to pupils such as Priestley was not within their own control, but was a function of the system:

> "anything he tried to do to improve his position only made it worse. His attempts to answer questions provoked laughter and ridicule. His attempts to minimise the distress it caused — a nervous smile around the room, a shrug of the shoulders, pretending that he had either caused the disturbance on purpose or did not care — served only to worsen his position with the teacher."
>
> (p.55)

Even when teachers champion the importance of giving consideration to all pupils, they do not necessarily practise what they preach. At this point, I propose to describe exactly what happened to me:

I lost my father when I was two years old, but my mother brought me up in an unmistakable way. She was supportive and encouraged me to be confident, justifiable and faithful. I never experienced beatings with a cane or other physical punishment in the home life with my mother and two sisters. From primary 1-to-5 in every examination, I could see myself at the top of the class (taking position number one).

My world just fell apart in school. At the time, however, I was diagnosed a disruptive child by a teacher. Being given this label not only shocked my mother, my two sisters, neighbours, friends and some teachers, it shocked me deeply. Although I remained "good" in the academic work and sociable, I was not as good as had been the case before the incidents.

The first experience:

I was eleven years old and in primary six. The teacher was responsible for the teaching of all subject areas in the primary school year (English, Maths, Science, Geography, History, Religious Education, Fine Art, Music and Physical Education). One time in the geography lesson, the teacher gave us a small booklet to read in silence. The book was about the life style of the pygmies of Equatorial Africa. After the reading the teacher then started to give comments and notes on the subject. It happened that some of his explanations were wrong which generated shouting and whispering among pupils all around the class. I took interest, then, and raised my hand to inform the teacher about our state of confusion. The teacher pointed at me and said "What is the matter?" I then stood up and explained to him how different things were in the book compared to what he was telling us. Thus, the teacher became angry with me. He brought me to the front of the pupils and

told me to teach them. All the students were shocked with this teacher's state of mind towards me. He reported me to the headmaster and told the headmaster that I made the class shout at him, if I were not punished he would not teach again. The headmaster left the teacher in his office and then came to the class to see what had happened. The student-classroom leader stood up and told the headmaster the whole story. This headmaster remained with us in the class to complete the lesson. He was also on my side and was not pleased with the teacher's attitude. But there was a shortage of teachers, and that particular teacher had wanted me to be punished. For two days, after school hours, I cleaned the school garden and planted trees in it. I felt worthless, rejected and discouraged from doing the right things.

The second experience:

I was in the same class (primary six) of the year, with the same teacher, this time in a maths lesson. We were given ten numbers to work on. Anyone who finished the work would bring the work forward to the teacher for marking. I happened to be the first person to complete the work, and brought it forward to the teacher; it was marked $^{10}/_{10}$. The person who completed the work immediately after me was a friend who shared the same bench with me — his was marked $^{8}/_{10}$. This friend of mine came back and asked me "but where have we gone wrong — and how many did the teacher give you?" I remained silent and kept hiding my work, because I knew he had been copying from me. He could not get the answers for the last two numbers correct because by the time I gave in my work for marking he was still at the beginning of number nine. When the teacher had finished marking the work of the whole class he then asked one general question: "How many of you obtained $^{10}/_{10}$??" I raised up my right hand and said 'myself'. My friend complained bitterly, saying: "How can this be — our answers are the same, the teacher gave you $^{10}/_{10}$ and I am given only $^{8}/_{10}$?" I turned to my friend and told him that we have different answers for the last two numbers . The teacher came along with a

wooden T- square and hit me on the nose — I could see blood streaming down onto my shirt! The teacher spoke to me in a loud voice saying: "You have no write to answer-back a friend in this class, young man". My friend was not punished, but he had his exercise book taken away with mine. I thereafter had my exercise book returned, secretly, to me by the headmaster. From then I remained silent in the classroom until I entered university where students were free to argue on such matters.

How sad it seems that the school experience might produce deviancy. The long story of my experience suggests many reasons why pupils become disruptive in school. If, for example, silence is an aspect of misbehaviour then the school-teacher is to blame for my silent behaviour.

But I am pleased that I have gone through the experience. Yes, I am sure 'pleased' is the word. Being stopped in my tracks in my life gave me the chance to re-examine my basic view of the school education and to look again at what most of us take for granted about teachers' attitudes, school environment and the pupils. It is no longer a question of what the school education is for, but what the school is like and what it does, that makes the pupils misbehave.

The point to note from these reviews is that problems do not always lie in the child or children. Disruptive behaviour is also present in the teachers. Thus, a pupil whom a teacher impinges on is likely not to behave with the teacher in the same way as he/she would with others, and I think this also suggests that both teachers and pupils themselves should be involved in the definition of behaviours in school.

4. The question of who are disruptive and, as Wittrock (1986) states, that sometimes what is considered as disruptive behaviour may be the pupils' reaction against difficult school environment. It is my contention to emphasise here that the objective of evaluation of behaviour in school is partly to ensure that, in the school

context, to deal with disruptive behaviours must always be the one in which children's "good behaviours" and steps towards them are being frequently noticed. Bull and Solity (1987), and Awiria (1991) have presented evidence that frequently, students delaying by talking instead of getting lessons started, functions as a means of asking for comfortable furniture. Seen from this perspective, behaviour which is disruptive can arise from problems at any point in the sequence setting events/behaviour/consequences. The circumstances may cue disruptive behaviour or may fail to cue a change from one "good behaviour" to another.

5. Finally, evidence is also emerging that some young pupils only display problem disruptive behaviours at school or at home, but not both. Home-school relations falls along this same line. As Watkins and Wagner (1987) have described:

> "The school will ... be in regular contact with home in some appropriate manner. The regularity and style of communication needs careful consideration .... a parent or parents are invited to come to school to help with the school's difficulties ..."
>
> (p.125)

However, the school and home are two different behavioural settings (Selfe, 1982; Ainsworth and Pease, 1989) in terms of rules, population size and the physical arrangements. Despite the concern expressed for home-school relations, there is little evidence that parents may inform the school about a child's behaviour at home or invite teachers of their child's school to come to the home to help with the child's home behaviour difficulties.

To conclude, issues such as those commented on above suggest that school behaviour management studies that ignore context can be misleading and instructional or policy studies that ignore conditions which threatens the management can miss an essential dimension related to the practical use of findings. The question of what makes DBS or what can we do to ensure that pupils behave appropriately should, thus, be looked at on different levels (as the whole school approach suggests).

APPENDIX 2

Open rivalry for a favourite toy, perhaps it is the only one.



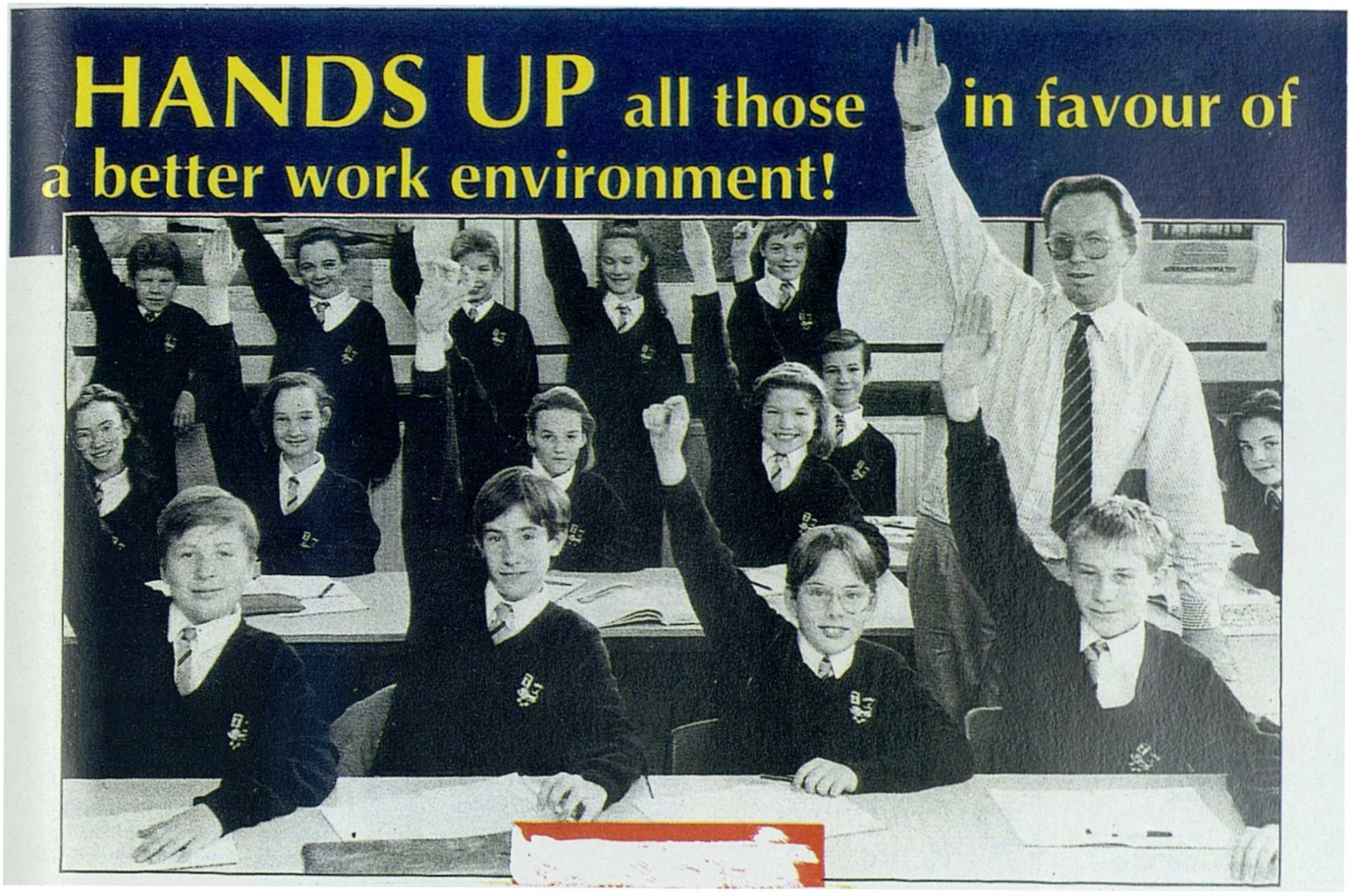
Situational analysis

Situational analysis really has purposes: to instruct and train people who find certain situations difficult.

Source: Kristal (1981:p.211)

APPENDIX 3

The pupils and teacher who favour a better work environment



Source: *Educational Supplement Magazine*, May 1992:p.4.

APPENDIX 4A

An introduction letter to Heads of Secondary School

University of Durham
School of Education
Leazes Road
Durham DH1 1TA

Date / /1993

The Head Teacher

Dear Sir/Madam,

I am presently undertaking a Ph.D. research programme which is supervised by the Department of Educational Research at the University of Durham.

The subject I intend to research is the relationship between the physical environment of school and pupils' behaviour. As part of this inquiry, I need to conduct a field study. This will involve questionnaire distribution to be completed by both teachers and pupils. It will also involve me in participant observation and interviewing some members of staff and students.

I should be greatly obliged if your school would be able to participate in the study. If you consider this request, I could visit you in the near future and discuss the proposal in detail. This may allow you to make a decision prior to committing yourself to this interesting study.

I look forward to hearing from you.

Yours faithfully,

Mr Onesimus Aganze Awiria

APPENDIX 4B

An official introduction letter from the University to Heads of Secondary Schools

University of Durham **School of Education**

Leazes Road, Durham DH1 1TA
Telephone: Durham (091) 374 2000
Direct Dial-in: Durham (091) 374 _____
FAX: (091) 374 3740

Emeritus Professor G R Batho MA, FRHistS
Professor F J Coffield MA, MEd
Professor G R Grace MA, MEd, PhD
Professor D R McNamara BSc, PhD

13.1.93

Dear Colleague,

Onesimus Awiria is completing a PhD on the effect on pupil behaviour of the physical environment of the school. We would be most grateful for any help you could give him in collecting relevant data. Please do not hesitate to contact us if you need further information.

Yours sincerely,

John McGuiness Jack Gilliland, supervisors

APPENDIX 5A

THE QUESTIONNAIRE TO PUPILS'

From: Onesemus Aganze Awiria

The Physical Environment Approach to Management of Behaviour in School

This form is designed to analyse students' attitudes toward the physical environment of school and its effect, if any, on behaviour. The term 'physical environment' is used in this form to mean - anything physical (for example, ruler, books, buildings, chairs, toilets, sports field). Please complete the form as indicated. Thanks for your co-operation.

No Name Required: Confidential

1. How long have you been a student in this school?
   Please state: .....

2. How much do you like the school?
   Please tick the appropriate box:

Like very much	☐
Like	☐
Neither like nor dislike	☐
Dislike	☐
Dislike very much	☐

3. In general, when you are judging whether you like a school or not, how important are the following elements?
   Please tick a box for each element.

		Very Important	Important	Not Sure	Not Important	Not at all Important
(i)	Teacher					
(ii)	Examination results					
(iii)	Academic facilities					
(iv)	Pupils obedience					
(v)	Class size					
(vi)	Uniform					
(vii)	Sports facilities					
(viii)	Quality of furniture					
(ix)	Quality of decoration					
(x)	Orderly environment					
(xi)	Noise level					
(xii)	Standard of Cleanliness - litter, state of buildings					

4. Below is a list of 10 important aspects of the physical environment of school. Please write down 1, 2 and 3 against three most important things for you.

(a)	(i)	Tidy classrooms	☐
	(ii)	Lavatories	☐
	(iii)	Nice decoration	☐
	(iv)	Lighting and heating	☐
	(v)	Library service	☐
	(vi)	Classroom with carpets	☐
	(vii)	Pleasant buildings	☐
	(viii)	High quality furniture fittings	☐
	(ix)	Satisfactory equipment resources for subjects	☐
	(x)	Sports facilities	☐

(b) Please explain why .....
.....
.....

5. You know, different schools have different conditions of its physical environment. In your school how do you rate the following facilities. Please tick relevant box.

	Very Satisfactory	Satisfactory	Not Sure	Dissatisfactory	Very Dissatisfied
1. Toilet provision					
2. Class size					
3. Location of school area					
4. Furniture fittings					
5. Library services					
6. State of buildings					
7. Decoration					
8. Storage					
9. Display					
10. Sports facilities					
11. Classroom floor					
12. Material resources for subjects					
13. Corridors and stairs					
14. Accommodation for subjects (in terms of rooms)					
15. Assembly hall					
16. Heating					
17. Signposts					
18. Lighting					
19. Standard of cleanliness and maintainance					
20. The school ground					

6. How do you think each of the following would effect your behaviour if they existed in your school? Please tick the relevant box.

	Better	Unaffected	Not Sure	Badly	Worse
1. Attractive school buildings					
2. Slippery classrooms					
3. Teaching in dining hall					
4. Library services not satisfactory enough					
5. Leaking roofs					
6. Suitable heating					
7. The walls full of graffiti					
8. Reasonable class size					
9. Attractive decoration					
10. Broken windows					
11. Insufficient material resources for subjects					
12. Comfortable furniture fittings					
13. Not enough proper sports facilities provided					
14. Too many litter bins					
15. Open landscape school area					

7. Please read each of the following statements. Put one tick in the box which best shows how you feel about the statement, and note that there is also space for comment.

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	Why? Comment
1. School buildings do not affect pupils behaviour.						
2. Tidy classroom has nothing to do with pupils behaviour.						
3. In general, quality of the physical environment of school cannot affect teacher-pupil relationship.						
4. The physical environment of school affects the way teachers treat you.						
5. The physical environment of school affects the way pupils' behave.						
6. Teachers and pupils must be involved in decision making on furniture, academic facilities and evaluation of school premises.						
7. A smaller teach pupil ratio is essential.						

Thank you for completing the questionnaire.

If you would like to make additional comments to my questions or to suggest aspects of the physical environment of school and behavioural issues I have overlooked, please make use of the space overleaf. I should be grateful for your comment.

APPENDIX 5B
THE QUESTIONNAIRE TO TEACHERS'

From: Onesemus Aganze Awiria

The Physical Environment Approach to Management of Behaviour in School

This form is designed to get a picture of the relationships between students' behaviour and the physical environment of school. Please note that the term 'physical environment' is used in this form to mean - anything physical (for example, ruler, books, buildings, chairs, toilets, sports field). Please complete the form as indicated. Thanks for your co-operation.

No Name Required: Confidential

1. How long have you been teaching in this school?
   Please state: .....

2. How much do you think pupils' like the school?
   Please tick the appropriate box:

Like very much	
Like	
Neither like nor dislike	
Dislike	
Dislike very much	

3. The following are some of the more frequently quoted elements of school. Please indicate the degree of importance you, as a professional teacher, attach to each of these elements to judge whether pupils would like a school or not by marking the appropriate boxes.

		Very Important	Important	Not Sure	Not Important	Not at all Important
(i)	Teacher					
(ii)	Examination results					
(iii)	Academic facilities					
(iv)	Pupils obedience					
(v)	Class size					
(vi)	Uniform					
(vii)	Sports facilities					
(viii)	Quality of furniture					
(ix)	Quality of decoration					
(x)	Orderly environment					
(xi)	Noise level					
(xii)	Standard of Cleanliness - litter, state of buildings					

4. Below is a list of 10 important aspects of the physical environments of school. Please write down 1, 2 and 3 against three most important things you, as experiential teacher of pupils' behaviour management, think are to your pupils.

(a)	(i)	Tidy classrooms	
	(ii)	Lavatories	
	(iii)	Nice decoration	
	(iv)	Lighting and heating	
	(v)	Library service	
	(vi)	Classroom with carpets	
	(vii)	Pleasant buildings	
	(viii)	High quality furniture fittings	
	(ix)	Satisfactory equipment resources for subjects	
	(x)	Sports facilities	

(b) Please explain why .....
.....
.....

5. You know, different schools have different conditions in terms of physical environment. In your school how do you rate the following facilities: Please tick relevant box.

		Very Satisfactory	Satisfactory	Not Sure	Dissatisfactory	Very Dissatisfied
1.	Toilet provision					
2.	Class size					
3.	Location of school area					
4.	Furniture fittings					
5.	Library services					
6.	State of buildings					
7.	Decoration					
8.	Storage					
9.	Display					
10.	Sports facilities					
11.	Classroom floor					
12.	Material resources for subjects					
13.	Corridors and stairs					
14.	Accommodation for subjects (in terms of rooms)					
15.	Assembly hall					
16.	Heating					
17.	Signposts					
18.	Lighting					
19.	Standard of cleanliness and maintainance					
20.	The school ground					

6. What effect do you think the following would have on your pupils behaviour if they existed in your school? Please tick the relevant box:

		Better	Unaffected	Not Sure	Badly	Worse
1.	Attractive school buildings					
2.	Slippery classrooms					
3.	Teaching in dining hall					
4.	Library services not satisfactory enough					
5.	Leaking roofs					
6.	Suitable heating					
7.	The walls full of graffiti					
8.	Reasonable class size					
9.	Attractive decoration					
10.	Broken windows					
11.	Insufficient material resources for subjects					
12.	Comfortable furniture fittings					
13.	Not enough proper sports facilities provided					
14.	Too many litter bins					
15.	Open landscape school area					

7. Please read each of the following statements. Put one tick in the box which best shows how you feel about the statement, and note that there is also space for comment.

		Strongly Agree	Agree	Not Sure	Disagree	Strongly disagree	Why? Comment
1.	School buildings cannot constrain children.						
2.	Tidy classroom has nothing to do with pupils behaviour.						
3.	In general, quality of thephysical environment of school cannot affect teacher-pupil relationship.						
4.	The physical environment of school dictates teachers management style.						
5.	The physical environment of school should be included in the field of behaviour management.						
6.	Teachers and pupils must be involved in decision making on furniture, academic facilities and evaluation of school premises.						
7.	A smaller teach pupil ratio is essential.						

Thank you for completing the questionnaire.

If you would like to make additional comments to my questions or to suggest aspects of the physical environment of school and behavioural issues I have overlooked, please make use of the space overleaf. I should be grateful for your comment.

APPENDIX 6A

OBSERVATION GUIDE

Subject Under Study:- the relationships between pupils' behaviour and the physical environment of school.

The Guiding Questions

What behavioural acts are to count in a particular characteristic of the physical environment of school?

Categories of school area to observe are listed as below:

1. Outdoor areas within school such as playground and landscape.
2. Assembly hall/libraries.
3. Corridor/stairs.
4. Classroom setting.
5. Toilet areas.

Characteristics of the physical school environment to observe in relation to pupils' behaviour are listed as follows:

1. The settings including space, furniture conditions, equipments and pupils' presence/action, and teacher's reaction.
2. Constraints of the physical settings, such as number of pupils in class, heating/lighting conditions.
3. The amount of graffiti.
4. The amount of litter.
5. Noise level, such as traffic noise.

6. Toilet conditions - such as adequate, clean or not.

7. Site of school - single or several.

8. Display of pupils' work.

9. School building conditions such as the decorative condition of the room, broken windows or cracked windows.

10. The number of pupils not in correct school uniform (as designated by the school).

11. Movement between lessons, and break times.

12. Provision/location of playing field.

APPENDIX 6B

OBSERVATION FORM

Date			19
Area of school			
Time:- From		To	
Behaviour observed	Detail characteristics of the physical environment	Teacher's reaction (if any)	Number of pupils involved
Difficulties or limitation faced during the observation:-			
Comments on success of the observation:-			

Appendix 7A: Interview Form for Pupils (IFFP)

Subject under study: The effect on pupils' behaviour of the physical school environment

Question	The physical school environment factors	If it existed	How it affected behaviour (reaction)
1. Have you ever done or acted for or against: (How has it affected your behaviour?) 2. Have you any knowledge of a friend who did something for or against:	1. The split-site of school?		
	2. The noisy school areas?		
	3. The old state of school buildings?		
	4. Graffiti-incorrect spelling?		
	5. Too warm classroom?		
	6. The narrow space in corridors?		
	7. The overcrowding in the classroom?		
	8. Carpeted rooms?		
	9. The unclean toilet?		
	10. Pleasant display of pupils' work?		
	11. Teaching in dining hall?		
	12. The adequate lighting?		

Question	The physical school environment factors	If it existed	How it has affected pupils' behaviour
	13. Uncomfortable furniture fittings (chairs and tables)?		
	14. Sharing materials with other pupils during lessons?		
	15. Insufficient resource materials for subjects?		
	16. The unattractive decoration?		
	17. Inadequate litter bins?		
	18. The inadequate lighting?		
	19. Comfortable furniture fittings?		
	20. The clean toilets?		
3. Have you ever done or acted for disliking a school very muich or liking a school very much? Or do you know someone who has so acted?			
4. Would you accept to do a project on the relationship between the physical school environment and pupils' behaviour? If yes, say why.			
5. If you had the chance to design your school what features would it have to improve the behaviour of pupils?			
6. Any other points you would like to add or comments to make on my questions?			
7. Thank you – You have been very helpful.			

Appendix 7B: Interview Form for Teachers (IFFT)

Subject under study: The effect on pupils' behaviour of the physical school environment

Respondent No.:

Question	The physical school environment factors	If it existed	How it has affected pupils' behaviour
1. From your experience as a school teacher, have you ever noted pupils positively or negatively reacting to:	1. The split-site of school?		
	2. The noisy school areas?		
	3. The old state of school buildings?		
	4. Graffiti-incorrect spelling?		
	5. Too warm classroom?		
	6. The narrow space in corridors?		
	7. The overcrowding in the classroom?		
	8. Carpeted rooms?		
	9. The unclean toilet?		
	10. Pleasant display of pupils' work?		
	11. Teaching in dining hall?		

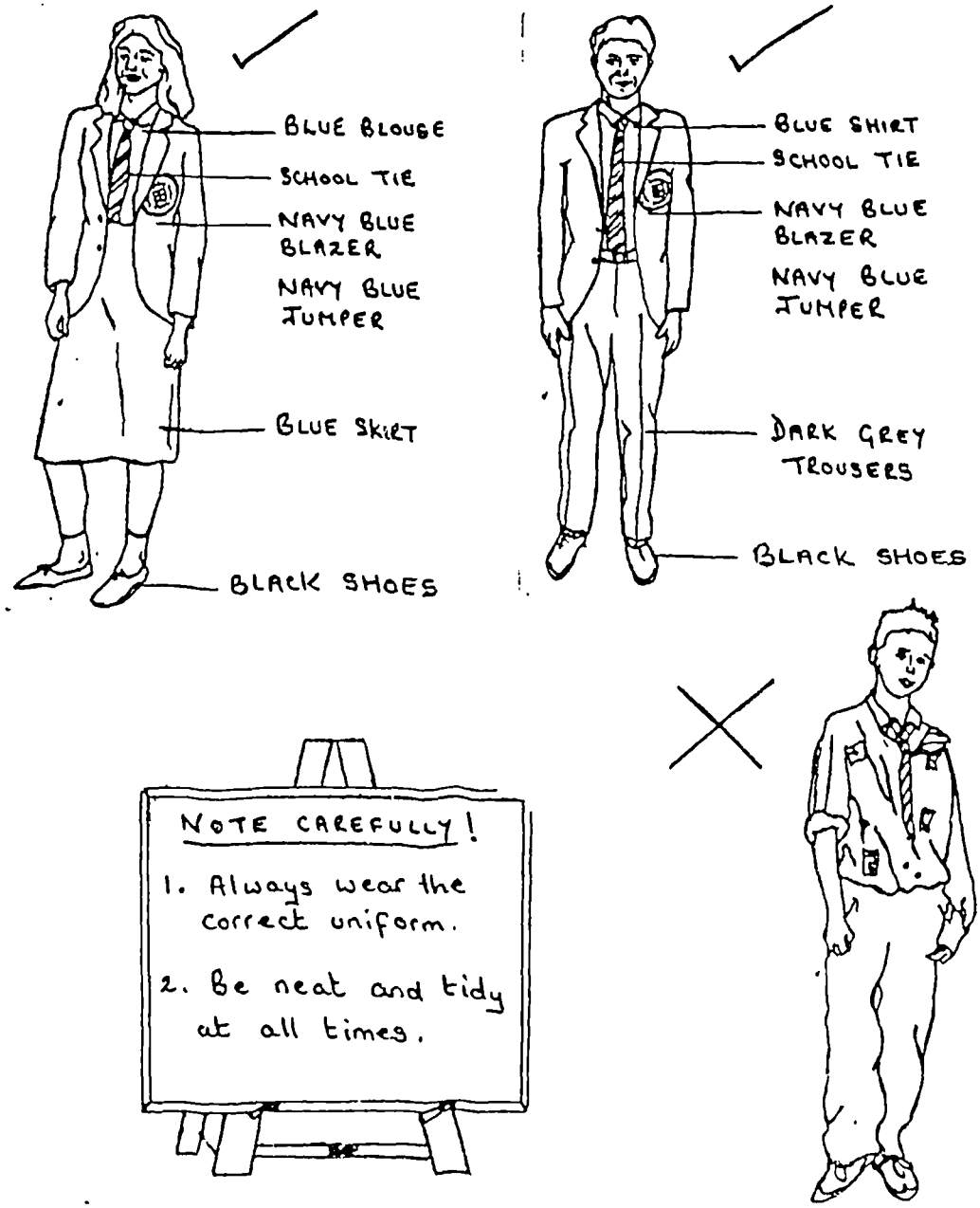
Question	The physical school environment factors	If it existed	How it has affected pupils' behaviour
	12. The adequate lighting?		
	13. Uncomfortable furniture fittings (chairs and tables)?		
	14. Sharing materials with other pupils during lessons?		
	15. Insufficient resource materials for subjects?		
	16. The unattractive decoration?		
	17. Inadequate litter bins?		
	18. The inadequate lighting?		
	19. Comfortable furniture fittings?		
	20. The clean toilets?		
2. Have you ever noted pupils taking action as a result of their intensive attitudes towards school: disliking a school very much or liking a school very much?			
3. Would you accept to do a project on the relationship between the physical school environment and pupils' behaviour? If yes, say why.			
4. If you had the chance to design your school what features would it have to improve the behaviour of pupils?			
5. Any other points you would like to add or comments to make on my questions?			
6. Thank you – You have been very helpful.			

APPENDIX 8

The Pupils' View of the School Uniform

SCHOOL UNIFORM

We are proud to belong to ~~a~~ this School and you should be too. The outward sign that you are a member of St. Leonard's is the school uniform that you will wear. Make sure that you wear the correct uniform at all times.



Source: Obtained in one of the sample secondary schools

APPENDIX 9

The methods of research used by HMI (1987) and Elton Report (1989)

1. *Education Observed 5: Good Behaviour and Discipline in Schools*, a report by HMI (1987). The report offers some guidance to help schools achieve the perceived good pupils' behaviour. The guidance is based on the techniques claimed already exist in some schools. The authors of the report say, 'the positive approach promotes the desired good pupils' behaviour, and that they come to see this approach through the eyes of the teachers and other school staff who take part in dealing with pupils' behaviour. Good behaviour is described in the report as 'the high standard of behaviour and good discipline' (ibid: p.i). The authors look at the reports of their previous visits to individual schools, particularly in January 1983, the summer term 1986, and some relevant/available work already published. They then made fresh visits to a few schools, selected as 'typically successful in promoting good behaviour' (ibid: p.4), but details are given. The reports offers guidance in terms of recommendations - number 100; and, of particular importance to this study, advocates the need to study the relationship between the physical school environment and pupil behaviour (ibid: p.11).

2. *Discipline in School*: a report of the committee of enquiry chaired by Lord Elton and published in 1989. The enquiry covered schools in England and Wales (ibid: [.54). The survey used numerous methods (ibid: p.55) to collect information. From the start, as noted in the report, the committee had 20 meetings to design the enquiry, then moved onto the questionnaire study. The first questionnaire study involved a sample of 3,500 teachers in some 220 primary and some 250 secondary schools; out of which 89% of the primary teachers and 79% of the secondary

teachers responded. The other questionnaire study involved a sample of 68 LEAs and 59 teacher training institutions out of which there were 60% respondents. The committee obtained some information from some scholars in the area of behavioural psychology in schools (ibid: p.212). Interviews were carried out which involved a sample of 100 teachers in 10 inner-city secondary schools (ibid: p.213). Some written information were submitted to the committee by particular organisations and individuals which amount to 600 in total (ibid: pp.205-210). Also, the committee looked at research evidence already published/available at the time and paid study visits to other countries; namely: the Netherlands, Norway and USA (ibid: p.214). In addition, to reiterate, the enquiry (Elton Report, 1989) considered what actions may be taken by central government, local education authorities, voluntary bodies owning schools, governing bodies of schools, headteachers, teachers and parents to secure the orderly atmosphere necessary in schools for effective teaching/learning to take place and to support acceptable standards of behaviour. Of importance to this study, the Elton Report (1989) emphasises the need to study the influence of the physical school environment on pupils' behaviour and argue that pupils' behaviour is not entirely determined by the social interaction with their peers or teachers or family conditions, but that the more equitable distribution of material resources and favourable/healthy material circumstances might well be of consequence for the development of school environments in which pupils' behaviour might improve.