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THE LINGUISTIC REPERTOIRE AND THE LEARNING OF ENGLISH AS A FOREIGN LANGUAGE:

a case study of high school monolingual and bilingual students in Aleppo City, Syria

by

Georges Saour

A thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy

Department of Linguistics

The University of Durham

1992

- 5 JAN 1993

This thesis is dedicated to my beloved mother, my sisters and brothers with great respect for their encouragement and patience.

I confirm that no part of the material offered has previously been submitted by me for a degree in this or any other University.

Signed

Date

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"...if the march of brain research helps us to understand our minds as products of our brains, it may eliminate the mystery without destroying the wonder... the human brain is the most exciting challenge left for science. To understand the world of physics, from the atoms to the stars, is wonderful. But to understand the organ that allows us to understand would be little short of a miracle."

(Blakemore, 1988:7, 16)

Abstract

This study is concerned with the impact of the linguistic repertoire on learning a foreign language. Our approach to the issue has been guided by the proposition and the general impression in the popular mind that bilinguals are better learners of foreign languages than monolinguals. If this proposition is correct, it means that the onus is on the language syllabus designers to design special syllabi defining the boundary between monolingualism and bilingualism.

Learner factors are particularly interesting avenues of research since they can ultimately influence the learning outcome. Therefore, primary consideration has been given to a few crucial factors/variables: (1) age; (2) age of exposure to the target language (TL); (3) gender; (4) attitude; (5) motivation; and (6) linguistic repertoire, thereby affecting both economy of explanation, and isolating the variables unique either to the monolingual or bilingual populations.

The researcher designed a survey questionnaire and one non-directive interview. The Student Questionnaire investigates the learner factors/variables. This variable control stage is followed by non-directive interviews as a means of interlanguage data collection from both populations (Group 1 and Group 2). We then proceeded on Crystal's (1982) six stages of profiling procedure of interlanguage speech production:

(i) a sample of data is obtained;

(ii) the sample is transcribed;

(iii) the transcription is analysed;

(iv) the analysis is profiled on a summary chart;

(v) the pattern on the profile chart is assessed; and

(vi) the profile pattern is given an interpretation from neurolinguistic and linguistic viewpoints.

The data for the investigation of the learner factors were gathered from 192 students selected from five secondary schools in Aleppo. Interview interlanguage speech production data were collected from 24 students representing the populations in question.

The learner factors data demonstrate clearly that the (1) age; (2) gender; (3) age of exposure to the target language; and (4) linguistic repertoire had no differential influence on the learners' attitude and motivation towards learning English as a foreign language. The issue is whether or not the linguistic repertoire factor/variable has any particular influence on the interlanguage speech productions of Group 1 and Group 2. The analysis of the emerged features from the profile charts (LARSP, PRISM-L, PRISM-G, and PROPH) reveals that bilinguals are not better learners of foreign languages than monolinguals. Based on the results of the study, the present investigator would not particularly recommend specific syllabi or teaching methods to foreign language learners with different linguistic repertoires. Yet, language practitioners should become aware of the notion of language dominance which is the resultant of the interaction between language and its proficiency and socio-psychological dimensions.

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Chapter I

Introduction

1.1 Introduction

For decades, the concept of language acquisition/learning has resisted single-facetted interpretations. It is very widely investigated and there are about as many different disciplines in the exploration of language acquisition/learning as there are books, articles, and dictionary entries on the subject. Thus, it encompasses a wide range of social, psychological, and neurological phenomena. In this broad sense, language acquisition/learning studies have become scientific. This, of course, is the most important criterion since it can identify inadequate theoretical formulations and weak conceptualizations.

The concept of language acquisition/learning is regularly employed in the fields of first and second language acquisition and learning, the development of bilingualism, the learning of linguistic variations within a language, and language pathology. By relating various disciplines in our research, we hope to gain a deeper understanding of the interaction between the disciplines and the concept of language acquisition/learning. This study is not specific to any particular language or to any group of language learners or teachers. The aim of this study is to suggest a framework for analysing language acquisition/learning issues and problems. Yet, its intention is not to proclaim ready-made solutions.

1.2 Purpose of the Study

We set out from the common notion in the popular mind that bilinguals are better learners of foreign languages than monolinguals. This notion is in line with the assumption of Albert & Obler (1978) that people who become bilingual at an early stage will later have greater facility in picking up a third language. The same notion in relation to the Armenian bilingual population in Syria is widespread among language practitioners.

Our study aims to establish whether this assumption is well-founded and consistent. More specifically, the study examines the possible effect of the linguistic repertoire on learning English as a foreign language.[1]

1.3 Significance of the Study

Ideally, we hope that through this study we will arrive at an informed and balanced understanding of the notion of foreign language learning. If we reach that goal it should have an effect on the way language practitioners work with foreign language learners. Nevertheless, our study may be considered significant for the following reasons:

(a) This is the first study to deal with the issue of the linguistic repertoire as a factor influencing the learning of English as a foreign language in a Syrian setting. The distinctive nature of this study lies in the fact that it is conducted comparatively. In short, it is a comparative study of the interlanguage speech

[1] The use of language learning is not based on the very widely conceived psychological concept, which goes far beyond learning directly from a teacher or learning through study or practice. It is based on the distinction introduced by the American applied linguist Krashen (1978, 1981) between language 'learning' and 'acquisition'. It has come to be increasingly used as the basis to refer to 'learning' as conscious language development particularly in formal school-like setting, and 'acquisition' as analogous to the way a child develops his first language 'naturally'.

productions of monolingual and bilingual populations who learn the same target language(TL), namely English. This study thus involves three languages (Arabic, Armenian, and English) which belong to two language families, namely Semitic and Indo-European.

(b) The present study seeks to investigate the learning outcome of Syrian students (Arabs and Armenians) at a time when most language practitioners of English in Syria seem to be subjective rather than objective in their judgement regarding the students' achievement in English. The knowledge derived from this study may provide a valid basis for becoming thoughtful language practitioners and, thus, distinguishing between solid truth and ephemeral fads or plain misinformation.

1.4 Research Hypotheses

The ultimate aim of the present study is to help us gain a better understanding of the concept of language learning and to contribute to the improvement and greater effectiveness of language pedagogy and pathology. Based upon the purpose discussed earlier in this chapter and the existing vast literature (See chapter II), the following hypotheses were formulated to guide the present investigation:

Hypothesis 1

Bilinguals use specific operations and strategies in learning a foreign language which differ from those used by monolinguals.

Hypothesis 2

The bilingual's two language systems and the monolingual's one language system (and their various components: syntax, semantics, phonology and pragmatics) are

simultaneously active in learning a foreign language.

Corollary

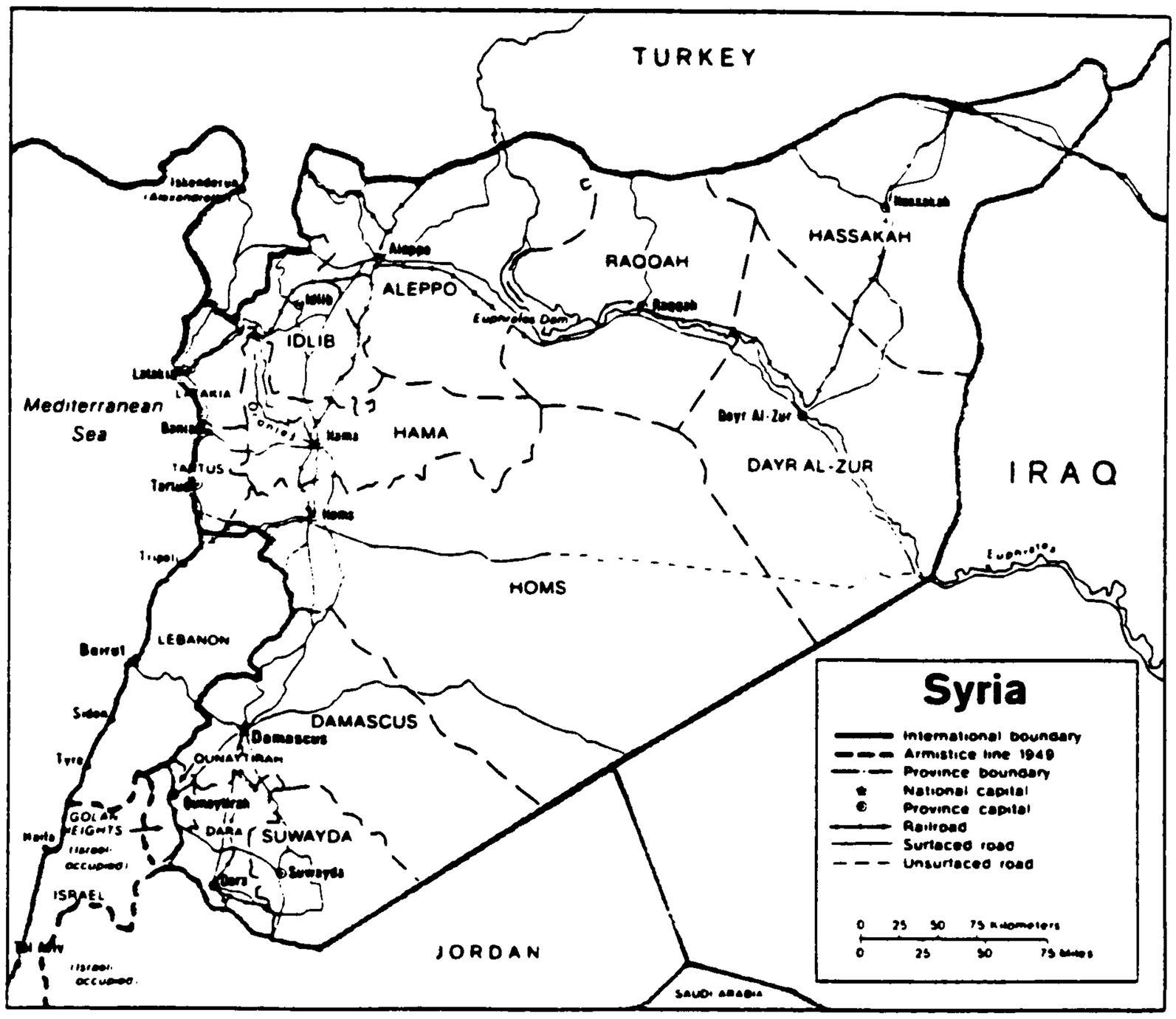
The potential for language interference increases with the number and specifications of the languages in the linguistic repertoire of foreign language learners. In other words, interference cannot be equally balanced.

Hypothesis 3

The linguistic repertoire of the foreign language learner has a variable effect on the learner's speech production.

1.5 Syria: Historical Review and General Description

In order to illustrate the distinctive nature of the setting, we will provide some information about Syria. Therefore, we need to indicate a few important dates, events and names to put our thoughts on minorities in Syria into an historical context. The selection of items for such a brief review is necessarily subjective. Our main purpose is to contribute to a better understanding of the ethno-linguistic minorities in Syria. It must be borne in mind that the picture is rather complicated by the fact that the history of Syria has unique characteristics which make it different from the history of other countries; perhaps nowhere else has history been so diverse in such small a region. The Syrian region is a geographic entity with marked natural boundaries—the Taurus mountains to the north; Sinai peninsula and Arabia to the south; the Mediterranean to the west; and the desert to the east (see Figure 1.1). However, if we do not want to oversimplify its historical record unduly, we can divide the entire time span roughly into six periods (see 1.5.1). In short, from an historical point of view, Syria offers an historical and archeological documentation at once both rich and varied.



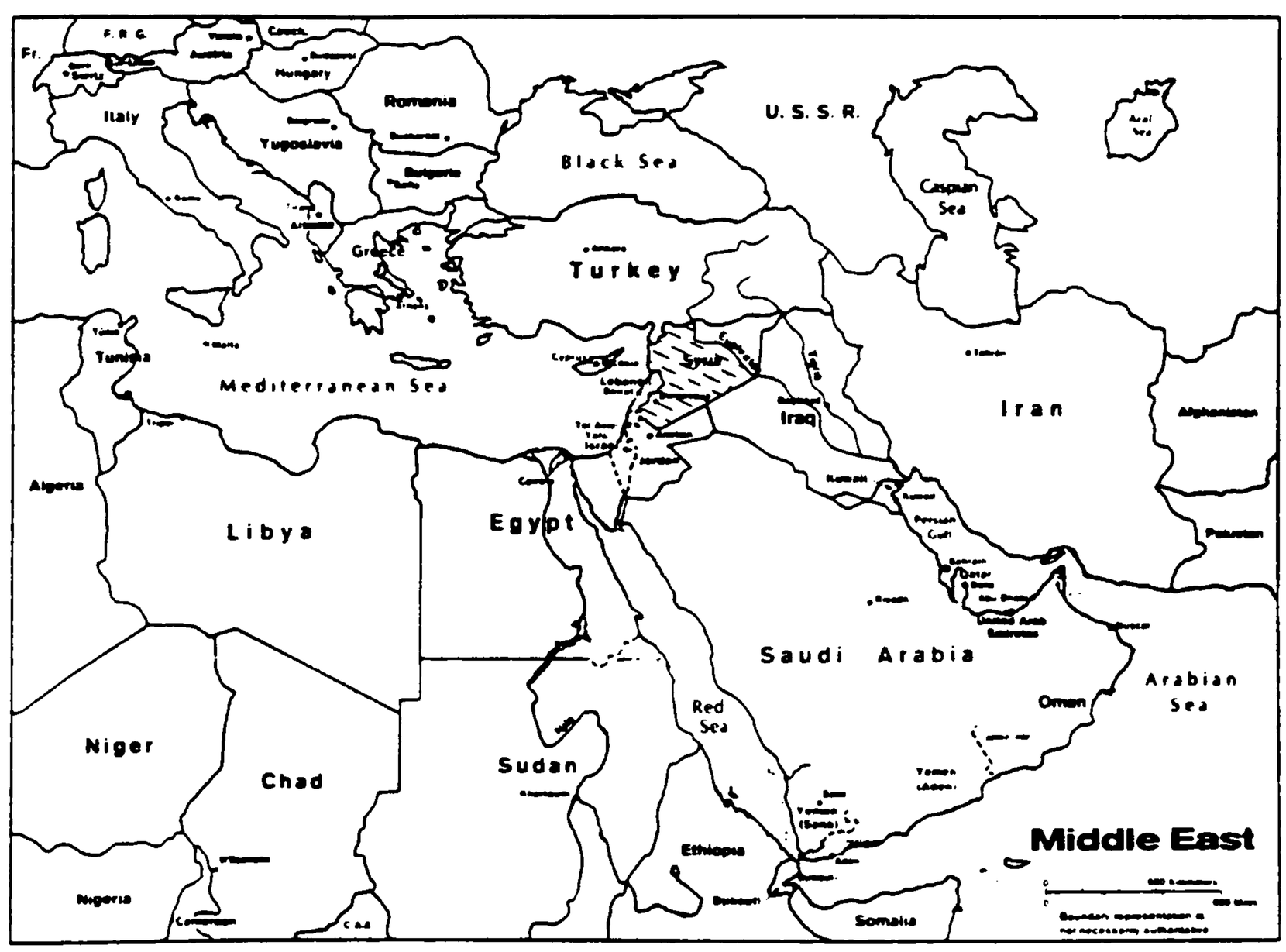


Figure 1.1: Syria and the Middle East

1.5.1 Historical Sketch

1.5.1.1 Ancient Syria

The first recorded mention of Syria is in Egyptian annals dating back to the fourth millennium describing expeditions to acquire cedar, cypress, and pine from the Ammanus and Lebanon ranges and gold and silver from Cilicia across northern Syria. Throughout this period an important commercial network was established to link Anatolia, Mesopotamia, Egypt and the Syrian coast. The recent archeological evidence of Ebla (at Tall-Mardikh, south of Aleppo in contemporary Syria), a sophisticated and powerful indigenous Syrian empire, suggests that the commercial network was under the protection of the kingdom of Ebla.

The strongest immigration to Syria throughout historical times has been Semitic. One theory holds that Semitic migration (the Amorites and Cannaanites) flowed into Syria during the third millennium. From this period the descendants of the intermarriages between Cannaanites and coastal Syrians became the Phoenicians. It is worth mentioning here that the newly found tablets in Ebla give evidence that Amorite is not the oldest Semitic language but the language found in Ebla— a variant of Pleo-Cannaanite. In the interval of several centuries after the total eclipse of the Amorite power in 1600 B.C. by the Egyptians, the area was in tremendous political upheaval. During the fifteenth, fourteenth and thirteenth centuries B.C., the Assyrians, Hittites and the Aramaeans, who eventually settled in north Syria, central Syria and the Mesopotamian-Syrian corridor to the north, established their kingdoms. Around the end of the thirteenth century B.C., the Israelites migrated to the area and became politically active. Their infiltration into Palestine helped them in taking over an already advanced civilization and by 1000 B.C. King David

had succeeded in establishing a strong kingdom in Samaria and Judaea.

In the interval of several centuries, the Assyrian power expanded to overwhelm the whole of Syria under the leadership of Nebuchadnezzar in the eighth century B.C. At its zenith early in the sixth century B.C. this kingdom, Syria, was conquered by the Persian Empire. With the fall of the Persian Empire to Alexander the Great in 333 B.C., a new era started and the whole area came into the cultural orbit of western ideas and institutions. With the death of Alexander, the empire was divided and Syria was included in the Seleucid kingdom (301–64 B.C.)—lands which were formerly under Iranian control. The Romans replaced the Seleucids and ruled Greater Syria (64 B.C.–A.D. 395). After the Emperor Constantine moved his capital from Rome to Byzantium and renamed it Constantinople (now Istanbul), Syria was divided into districts and ruled from there. In this empire (A.D. 395–636), Syria experienced local autonomy as its ruling Families were Syrian (Ghassanids)—Christian Arabs loyal to Byzantium. Yet, Syria's autonomy was weakened by other Arab invasions from the south, preparing the way for a new era.

1.5.1.2 Muslim Empires

Damascus surrendered to the Arab conquest in 635 which was for most Syrians a liberation from persecution by alien Byzantines. The Arab rule over all Syria by 640, however, was supported by the Syrians' refusal to resist the Arab advance. The Syrian population was already partially Arab and the newly arrived Arabs did not appear completely alien. The first Caliphate was the Umayyads and Damascus was made its seat. During the eighty-nine years of Umayyad rule the Islamic empire stretched from Atlantic and the Pyrenees to the Himalayas and

the marches of China, and from the Aral Sea to the first cataract of the Nile. The Umayyads followed the Syrian traditions of administration, armies, navy, and economic expansion. The system often appeared to be Syrian. Arabization and Islamization proceeded gradually; the Arabic language replaced Aramaic and most Syrians adopted Islam. Syria prospered under the Umayyad century economically as well as intellectually and this period is often referred to as Syria's 'golden age'.

Syria became a province of an empire when the Umayyads were overthrown by the Abbasids in 750 who established their Caliphate in Iraq. Syria remained important for its own intellectual achievements through its significant contribution to the great intellectual renaissance in Baghdad after 750. Earlier translations of the scientific and philosophical heritage of the ancients (Greek, Persian, and Indian) were translated into Arabic, often from Syriac, by Christian Syrian intellectuals in Baghdad's House of Wisdom. The Abbasid Caliphate began to fragment in the late ninth century. In the time of political crisis throughout the empire, Southern Syria lay in the Fatimid sphere of influence (Fatimid Caliphate established earlier in Egypt) who were not tolerant to subject peoples especially Christians. Northern Syria was ruled by by the Hamdanid dynasty from Aleppo during the tenth century; they were Arab tribes from the Syrian desert. The Crusaders from Europe entered Syria and established the principalities of Edessa (Urfa in modern Turkey), Antioch, Tripoli, and the Latin kingdom of Jerusalem between 1097–1144. The Seljuk Turks, who advanced from Central Asia occupied much of eastern Syria and set themselves up as Sultans in Baghdad. In this period the Isma'ili (Shiite sect) underground movement became very powerful politically in Syria. Syria was reunified towards the end of the twelfth century when Salah Al-Din Ayyubi and his warriors Mamluks (Turkish-speaking slaves) terminated the Fatimid Caliphate in Egypt

and defeated the Mongol armies which had already occupied all of Syria. The unification of Syria was brought to an end by Saladin's death. Saladin Ayyubi's successors (Ayyubids) broke Syria into small dynasties as a result of their quarrels among themselves. The changes that took place weakened the Ayyudids and the Ottoman sultan defeated them at Aleppo in 1516. Syria then came under the rule of a new Muslim Empire.

Syria was made one of the provinces of the Ottoman Empire supported by Turkish military forces. By the sixteenth century, all of the Middle East was occupied by the Ottomans. When Syria came under the rule of the Ottomans, they had never been regarded as alien because the Turks respected Arabic as the language of the Quran and at the same time became the defenders of the Islamic faith. In the Ottoman system of administration, each religious minority—for instance, Shiite Muslim, Greek Orthodox, Armenian, and Jewish—had a religious head who administrated all personal status law in addition to certain civil functions. In spite of the fact that the Syrian provinces had special importance for the Ottoman government since they controlled the routes between Istanbul and the holy cities of Mecca, Jerusalem and Damascus, Syria did not know economic prosperity. Western penetration started when Sultan Sulayman I granted 'Capitulations' to France, Britain and Russia, to protect the Christians of the Ottoman Empire. In the latter part of the eighteenth century, Ottoman rule began to show signs of decline. This period was one of social and economic regression for Syria. In these circumstances, the country was transformed into a market for Western industrialization—for example, the railways were built largely with French money. As a result of internal discontent, constant strife with the central authority, as well as European pressure, the Ottoman sultans made some reforms in the nineteenth

century. Although Sultan Abdul Hamid II (1876-1909), who was known in Syria as The Butcher, tried to preach Pan-Islamic ideas, the Syrians were persistent in their endeavours to throw off the Ottoman yoke. The first significant Western cultural influence was the emergence of the concept of Arab Nationalism in Syria. World War I brought the climax of this concept with the fall of the Ottoman Empire in 1916.

1.5.1.3 World War I and Arab Nationalism

The British at this time designed a war strategy to open a breach between the Arabs and the Turks owing to Turkey's alignment with Germany. Britain asked Sharif Husayn, leader of the Hashimite family and an Ottoman appointee over the Hejaz, to start an Arab revolt against the Turks in return for some kind of independent Muslim state endorsing his eventual kingship of it. Ironically, with the British promise of an Arab independent state in the Balfour Declaration of 1917, there was another promise of a Zionist 'national home' in Palestine. Husayn accepted and in 1918 Sharif's third son Faysal entered Damascus and assumed immediate control of all Syria except the areas where the French troops were garrisoned. When Faysal became the king of Syria in 1920 by the proclamation of the General Syrian Congress, Arabic was established as the official language and the school texts were translated from Turkish into Arabic. Following the Russian revolution, the Bolsheviks published secret diplomatic documents. Among them was the Sykes-Picot agreement of May 16, 1916 that Britain and France had agreed to the French mandate over Syria and Lebanon and the British mandate over Palestine and Transjordan. In July 1920, the French occupied Damascus, putting an end to the Arab government.

1.5.1.4 The French Mandate

In its mandate period the French sought to exploit sectarian differences, accentuating religious differences and cultivating regional sentiment as opposed to national pan-Arab sentiment. This reached its climax when Syria was divided into five semi-autonomous parts—the Jabal Druze, Aleppo, Latakia, Damascus, and Alexandretta (modern Iskenderun). Each part was a concentration of a religious minority, and many attempts by nationalists to unite Syria proved fruitless. On the one hand, Syria showed the cultural influence of the French in its schools, press, and even style of dress. On the other, it became a country of refuge for persecuted groups in neighbouring countries— Armenians and Kurds from Turkey between 1925 and 1945 and Assyrians from Iraq in 1933. French attempts to handle the Armenian refugee problem in particular provoked Syrian fears that they might play the same role in Syria as that played by Zionists in Palestine. Under Leon Blum's liberal-socialist government in France, the Treaty of Alliance between France and Syria was worked out and the first nationalist government came to power in 1936. During that period, France agreed to the absorption of Alexandretta (a Syrian province) by Turkey after direct negotiations between Turkey and France ended in 1939. Owing to this agreement, disturbances broke out in Syria against both France and the Syrian government because they had not protected the Syrian interests. As a consequence, parliamentary institutions were abolished and the French parliament declared officially that it would not ratify the Syrian-French treaty.

1.5.1.5 World War II and Independence

World War II radically changed the course of Syrian history after the early defeat of France by the Germans. The newly formed Vichy forces in Syria and

Lebanon, which were French forces administered by the Nazis, were defeated by the Anglo-Free French forces. On the eve of the invasion, General de Gaulle, the Free French leader, promised Syria and Lebanon unconditional independence and the right to reunite if they wished. In the mean time, the Syrian government was granted the functions of fourteen administrative departments with the exception of the social, cultural, and educational services as well as the Troupes Speciales du Levant (Levantine Special Forces). Despite France's opposition, Syria and Lebanon were recognized unconditionally as sovereign states by the Soviet Union in July, the United States of America in September 1944, and Britain a year later. Syria won an invitation to the United Nations founding conference when it declared war on the Axis powers in February 1945. Under the pressure of the Allied nations, France had to evacuate Syria. But France made the withdrawal of its Troupes Speciales du Levant a conditional one by asking Syria to sign a treaty protecting the French cultural, economic, and strategic interests in the area. This demand provoked nationwide demonstrations, armed clashes between French units and Syrian civilian and police, and the French bombarded Damascus. Syria's and Lebanon's complaint to the Security Council won both Soviet and American support. In February 1946 a U.N. resolution called on France to withdraw from Syria and Lebanon, and by April 15, 1946, all French troops were evacuated.

1.5.1.6 After Independence

Although most of the Syrian politicians throughout this period regarded Syria as a part of a larger Arab nation, they were affected by different cultural heritages. Some of them adopted western and others eastern ideals of democracy for both social and economic evolutions. An immediate result of such diversity was a succession of coups and countercoups by different political groups. In other words, coups

in Syria came to signify profound frustrations and social tensions. In the external political arena, the Israeli conflict had erupted after they had gained independence, and Syria could not then ignore the long-held Zionist territorial ambitions, their policy of step-by-step expansion, and the sufferings of the Palestinians. The result of this conflict was a few military confrontations between Israel and Syria; the prominent ones were the Arab-Israel war of 1967, and the 1973 war. Despite the fact that we are not in a position to offer comprehensive analyses of Syria's contemporary historical events, it is imperative to enquire about modern Syrian society for the purpose of this study.

1.5.2 Syria and the Syrians

1.5.2.1 Land and Population

Syria had a special importance throughout history which can be attributed to its strategic geographic location—the meeting place of three continents and several cultures. Its importance continues in modern times due to the above reason, besides being a vital factor in Arab politics and in Arab-Israeli conflict. Modern Syria includes some 185.180 square kilometers of plains, mountains, and deserts. According to official reports available in the late 1978, the population in mid-1976 was 7,595,000, including 340,000 Beduins and 240,000 Palestinian refugees (Nyrop, 1979). It is evident from the youthfulness of its population (48% under fifteen years of age) that Syria's growth rate is rapid.

1.5.2.2 The Peoples and Religions

Syria has more ethno-linguistic minorities than other countries in the Middle East. Structurally, the Syrian population appears relatively homogeneous because

many of the ethno-linguistic minorities are Arabized and completely assimilated. The fact is that their Arabization and assimilation can be attributed to the re-growth of Pan-Arabic ideas preached by Baathists—a political party which became very active after 1963. In any case, from a social perspective, Syria is still described by many scholars as a 'mosaic of minorities' (Petran, 1972) in spite of the fact that the Arabic language plays a great unifying role.

In this connection, it is worth noting that owing to the vast influence of Baath ideology regarding the notion of Pan-Arabism, the government does not identify individuals with ethnic minorities but as Arabs or as members of religious communities (Nyrop, 1979). But this does not mean that this policy of Arabizing the population has succeeded in eradicating the extreme heterogeneity and lack of coherence which exist among the ethnic communities in Syria. The consciousness of ethnicity is well developed; the individual's primary loyalty is either ethnic or religious. However, as soon as we try to learn about ethnic groups, we come up against the most fundamental questions about their nature. What is a minority group? What are the internal and external criteria for minority membership? We will try to explore this issue next.

(i) The Nature of a Minority Group

In exploring this area it is useful to begin with the 'objective' conditions which usually lead to a kind of co-existence of the social groups within any society—economic, political, social, and historical circumstances. No doubt, such circumstances often determine the differences between the groups, and it is therefore not surprising to find that they feel themselves to be members of a particular social group which is distinguishable from other such groups. For our purpose it is necessary to look at the possible connections between the 'feelings' of being a member of a certain

group and the solid social realities of their lives. In other words, it is crucial to recognize the psychological criteria for defining certain social groups as minorities. Although many sociologists, political scientists, and others have proposed definitions of social minorities, we will adopt the set of criteria proposed by Wagley and Harris (1958), quoted by Simpson and Yinger (1965) for their comprehensiveness. From the point of view of Wagley and Harris:

"(1) Minorities are subordinate segments of complex state societies; (2) minorities have special physical or cultural traits which are held in low esteem by the dominant segments of the society; (3) minorities are self-conscious units bound together by special traits which their members share and by the special disabilities which these bring; (4) membership in a minority is transmitted by a rule of descent which is capable of affiliating succeeding generations even in the absence of readily apparent special cultural or physical traits; (5) minority peoples, by choice or necessity, tend to marry within the group"
(Simpson and Yinger, 1965:17).

What emerges from these criteria is a conviction that numbers have not been considered in defining minorities but rather the social position of the groups.

Now that we have highlighted the criteria for defining a minority group it will be essential to present the internal and external criteria of minority membership. As the British sociologist, Henry Tajfel (1978), argued, there are three general sets of conditions which usually strengthen the 'in-group' affiliations in members of minorities. The first of these is the emergence of psychological separateness as a result of constraints imposed by the 'outside' social categorizations reinforcing their awareness of being in a minority. Another set of conditions, which can lead

to psychological and sometimes to social separateness, is the strong belief in preserving their distinct identity due to their different cultural, social, and historical backgrounds. It should be pointed out, however, that the result of this set of conditions is often intensified by the first and third set of conditions. The third set of conditions is that their affiliation with members of majorities is resisted, and this may finally lead to the emergence of a new and strong feeling of a common group identity. In essence then, the dual relationship between the internal and external criteria is important to allow the group identity to emerge. It is, however, interesting to reflect that this group identity psychologically consists of three components: cognitive, evaluative, and emotional (Tajfel, 1978). In other words, his proposed tripartite psychological distinction of minority group identity is (1) the individual's awareness of belonging to a distinct social group; (2) the assessment of their social position in comparison with other identifiable groups or with the majority in general; and (3) the individual's attitudes (either positive or negative) towards the characteristics of his/her group and his/her membership.

With the nature of a minority group thus established, this can be the guide to our learning about the ethno-linguistic and religious-cultural minorities more objectively and analytically.

(ii) Description of the Syrian Society

To begin with, once more, let us remind ourselves that the heterogeneity of Syrian society has led the government to a policy of de-emphasizing ethnic differences. Accordingly, ethno-linguistic minorities are less important than religious-cultural minorities. Therefore, it seems natural that the effect of this trend in dealing with the ethnic minority issue is to produce statistically inaccurate census reports. However, the estimated linguistic minorities today constitute ten percent of the

population—Armenians, Kurds, Turkomans, Circassians, Syrians (i.e. speakers of Syriac), and Assyrians, whereas ninety percent of the population are native speakers of Arabic. But, as we have seen in 1.5.2.2(i) numbers have not been considered a criterion in defining minority groups, and, furthermore, in the absence of adequate documentation there is no reason to become sensitive to their probable implications in the present study. Religiously, the Syrian population also appears strikingly heterogeneous because of the geographic concentration of the religious minorities—Muslim, Christian, and Jewish sects—which, in turn, played an important role, first, in preserving the cultures of the minority groups and secondly in evolving new cultural features for the religious minorities in Syria.

At this point the reader might care to be acquainted with the social groups in the Syrian society exclusively. However, we must stress here that such an overview cannot be introduced without some difficulty because of the lack of documentation. On the other hand, for the purpose of our study, it is necessary to look only at two social groups in Syria (the Arabs and the Armenians) who structurally constitute a majority and a minority respectively.

(a) Arabs

Today the Arabs account for the vast majority of the population in Syria. They are identified with speakers of Arabic as a mother tongue throughout the country. The question of the relationship between being Arab and Muslim is particularly acute and it has bearing on the policy of many Arab countries in the Middle East. In spite of the fact that the task of the Syrian governments after independence has been to dismiss any sort of relevance between these two characteristics, many Syrians still cling to the opinion that they go hand in hand and one cannot be an Arab without being Muslim and vice versa. Without going into details in order

to identify the reasons underlying this opinion, we can consider the fact that more than seventy percent of the Christians in Syria are Arabic-speaking as evidence to dissubstantiate it.

Arabic is the mother tongue of over 150 million people and the second language of several million in the world. One of the Semitic languages, its alphabet was based on the model of the North Semitic alphabet which consists of 22 consonants and was developed around 1700 B.C. in Palestine and Syria. Most noticeably, Arabic, like Hebrew and Syriac, varies from other languages (e.g. Armenian and English) in the direction in which it is written and in the way vowels and consonants are represented (Crystal, 1987a). The letters of the Arabic alphabet are twenty-eight in number, and are all consonants, though three of them are used to indicate the long vowels and diphthongs. Originally, there were no signs for the short vowels and in order to indicate them they made use of diacritics (the marking of vowels). Unlike the alphabets of India, the attachment of the diacritics to the consonantal letters is optional. Arabic exists in classical, modern standard, and colloquial forms: Classical Arabic is strongly identified with religion for having the status of being the sacred language of Islam; Modern Standard Arabic (MSA), which was developed from the Classical, is used as a lingua franca of educated Arabs; and Colloquial Arabic which exists as modern dialects throughout the Arab world—the Syrian dialect is intelligible in Syria, Lebanon, Palestine, and parts of Jordan and Iraq.

What is necessary to add in the present context is a reminder that the co-occurrence of Modern Standard Arabic (MSA) and Syrian Arabic throughout the Syrian community, each with a distinct range of social functions, give rise to a diglossic situation. According to Ferguson's (1971) account of diglossia, Modern

Standard Arabic (MSA) and Syrian Arabic in Aleppo is an example of diglossia of high (H) and (L) varieties of Classical Arabic. Unlike Modern Standard Arabic (H), the Syrian Arabic in Aleppo (L) cannot be distinguished by the following societal functions: (a) Official; (b) Wider Communication/ Lingua Franca; (c) Educational; (d) Literary; (e) Religious; and (f) Technical. Moreover, the Syrian Arabic in Aleppo is associated with distinctive syntactic, semantic, phonological, and pragmatic aspects.

(b) Armenians

The homeland of the Armenians since about the sixth century B.C. is Transcaucasia, in what are now Turkey and Russia. In the course of time settlements of Armenians in Asia Minor have been destroyed by several great massacres, but there are still Armenian communities in the Balkans, the Americas, several of the Arab countries and elsewhere. The largest Armenian community is now a self-governing republic, the center of a flourishing Armenian culture. A bulk of Armenians, fleeing from the Turkish massacres, took refuge mainly in Syria between 1925 and 1945, and settled with the help of the Mandatory Power. Most of the Armenians are reported to be urban people who have been established in Aleppo, Damascus, and Beirut, but there are some village settlements. It is necessary to draw attention to the fact that the Armenian element in Aleppo (roughly 75 percent) is particularly large and important. Their economic position is strong and they are valuable citizens whom a developing Syria needs.

Armenian is an Indo-European language whose script was developed in the 5th century A.D. and is still in use (Crystal, 1987a). Despite being influenced by and patterned after the Pahlavi script (a descendant of the Aramaic alphabet), the Greek influence is much more apparent in the substitution of Pahlavi vowels

(diacritics used above and below consonants) for letters and also in the direction of writing left-to-right. However, the development of Armenian script, as a means of stabilizing and formalizing Armenian speech, was an important factor in the unity of the Armenian nation and church throughout ancient and modern history. It should be added though that this branch of the Indo-European family consists of a single language. It has two written forms, known as Classical Armenian (Grabar) and modern Literary Armenian: the former is the language of the older literature and the liturgical language of the Armenian Church today all over the world, whereas the latter exists in two standard varieties: East Armenian is the official language in the republic of Armenia, and West Armenian is a dominant variety elsewhere. Most Armenians belong to the Armenian Orthodox Church (Gregorian Church), but some belong to the Roman Catholic and Protestant Churches.

Syria's Armenians are the largest unassimilated group socially as well as geographically. One Section of the Armenian community , 'Tashnak' (the Armenian nationalists), is opposed to any kind and degree of assimilation lest they lose their national traditions—culture and customs. The other section, however, and perhaps the larger part, wishes to co-operate with the majority, and advocates a limited extent of assimilation while at the same time stressing the maintenance of Armenian identity through their national characteristics. As such they appear to be the largest unassimilated element in the population of Syria who retain their customs, maintain their schools, sport and social clubs, and read newspapers in their own language.

The intention of this chapter was to give an outline of the Syrian history. On the basis of this understanding, we can now look at the educational development in Syria.

1.5.2.3 Education

The demand for education has increased sharply after Syria's independence. Since then the complexity of the relationship between Syrian society and education, because of the heterogeneous nature of the population, has been widely recognized. In this connection, it is worth noting that the educational policies in recent decades reflect the basic intention to produce the Syrian man with loyalties to state and Arabdom rather than to region, group or sect. The recognition of the distinct role of education to bring up a national Arab generation, who are attached to their land and history, proud of their heritage and imbued with the spirit of contributing to the service and progress of humanity, has brought about many purposeful changes in Syria's educational policies. We therefore need to illustrate briefly here the historical background of education in Syria.

(i) The Historical Background of Education

Education was in the hands of religious teachers until the middle of the nineteenth century; there were traditional Quranic schools and in small schools run by priests and nuns. The growing importance of education became clear as the Ottomans introduced state schools and as the local Christian communities and foreign missionaries (Catholic and Protestant) improved and extended their schools in mid-century. Throughout King Faisal's rule (1918-1920), schools were Arabized and a new plan for educational development was considered. However, the new educational policies of the Arab government started to collapse after a short duration when Syria and Lebanon became mandated territories of France. The Mandate government dismantled the educational programme started by the Arab government and local schools closed down unless they adopted French-approved curriculum which made the study of French compulsory. It was only during the

mandate years that education in private schools became sufficiently sectarian or foreign to tolerate or welcome any national educational reform movements. The French, through their educational policies, succeeded in alienating some of the educated elite in Syria and Lebanon.

In the late forties, immediately after independence, the nationalist governments emphasized the importance of transforming the educational policies into ideologically motivated ones. First, they have made strenuous efforts to foster education, and thus breaking down class barriers by creating equality of opportunity and increased social mobility. Second, the success of attempts to politicize education has also depended on the backing of an early reform of state control of the private education (all schools and colleges). In 1967, a decree was issued by the Ministry of Education to control strictly the management of private schools and colleges but which left their ownership in private hands. As a consequence, curricula alternations have gradually given rise to an Arab Syrian educational orientation. On the other hand, it has eliminated the underlying ideological and philosophical assumptions of foreign curricula which were adopted by the educational system before independence. However, it is important here to be acquainted with the Syrian educational system which implemented and managed the curriculum change.

(ii) The Educational System

The importance of building a strong educational system has been recognized as a long-term project. The success of attempts to modify the Syrian educational system can be attributed to the fact that there were urgent needs to eliminate illiteracy which hampered social and economical progress. This may not be so surprising considering that educational administration is viewed today as a social process involving the management of human relations (Getzels et al 1968). In different

systems of education the responsibilities are distributed in different ways. The Ministry of Higher Education supervises the education of the four universities—Aleppo, Damascus, Tishrin in Latakia, and al-Baath in Homs—besides several technical institutes. On the other hand, the Ministry of Education is primarily responsible for the administrative and organizational aspects of school education and vocational-technical training. For example, the school educational system is organized in three broad stages:

(1) Primary Level

Education for children from the beginning of mandatory schooling to early adolescence. It is sometimes preceded by pre-primary private (nursery) education. It is compulsory and free, and it lasts for six years. It is customary for non-state schools to include foreign languages as an additional subject of study.

(2) Intermediate (Preparatory) Level

Education is non-compulsory but free and full-time. It lasts for three years (ages 12-14) after completing the primary level. It introduces the pupils to additional subjects, such as foreign languages, science, and politics.

(3) Secondary Level

This is three-year non-compulsory education which prepares pupils (ages 15-17) for university entrance. This level is divided into two streams: the general and the technical. The last two years of the former stream is also divided into literary and scientific streams, while the latter offers courses in industry, agriculture, commerce, and primary school teacher training.

We have here made an attempt to overview the history of Syria to a certain extent from an educational perspective. Our contention is that this approach is useful because in this way we are able to relate the historical background to the

educational development to which it is mostly allied. Moreover, this approach makes it possible to show that there is no justification for the neglect of politics as a highly influential factor in affecting changes to occur in educational systems. Indeed education, as a professional field of study, can be regarded as a multidisciplinary source discipline; it draws on a number of other studies, such as philosophy, psychology, politics, or sociology. By treating it as such, the essential concepts and policies for foreign/second language pedagogy could not be isolated from educational assumptions.

From our review of the history of Syria we can conclude that bilingualism has no official status. Like many other countries of the world Syria has not officialized the bilingual status of its people for various reasons, most of them political. Putting it differently, the Syrian government in its educational planning has weighed up more the political and educational implications of officializing bilingualism in the country than the psychological and social ones. Needless to say it is ironic to observe that there are more bilingual people in an officially monolingual country like Syria, than in an officially bilingual one like Canada (Crystal, 1987a).

1.6 Summary

Our object in the present study is to ascertain whether there is any relationship between the linguistic repertoire and the learning of English as a foreign language. We have begun our study by outlining its purpose and significance, the research hypotheses, and the background knowledge about its setting. The following chapters are organized in the following way.

In chapter (II) we present a review of literature relating particularly to recent and current developments of the phenomenon of bilingualism and the theory of

interlanguage. Chapter (III) describes the methodology that has been used to collect data for the study, with particular reference to the instrumentation involved. Chapter (IV) examines the variables which might have an effect on the learning of English as a foreign language. It is hoped that by doing this systematically, we will be able to control the variables with multifarious influences on the learning outcome. In other words, if we reach that goal it should have a bearing on the way we assess and interpret the results of this study (Chapter V). We begin chapter (V) by assessing the patterns which have emerged on the profile charts. We also interpret them in neurolinguistic as well as linguistic terms. In chapter (VI), we shall draw together the results obtained and consider whether it is appropriate to make specific pedagogical recommendations.

Chapter II

Review of the Literature

2.1 Consensus View on Bilingualism[2]

2.1.1 Introduction

A diachronic look at the phenomenon of 'bilingualism' provides ever-growing evidence that bilingualism has been a salient characteristic of the upper strata of widely diverging societies since the time of the ancient Egyptians (3000 B.C.) till the present time. This fact, which is well documented by Lewis (1976) and Mackey (1976), cannot but be attributed to the consistent encouragement children have usually received to become bi- or multi-linguals. Although the history of studies of bilingualism does not fall into a neat, continuous line, it is feasible to trace some inquiries into languages back to Hellinistic times and the Middle Ages. For instance, the work of Quintillian and St. Augustine support this point of view. The former analysed the Greek and Latin languages of a Roman child during his early years; whereas the latter gave an example of an 'immersion' programme by having a child educated in his second language. But the change from philology to linguistics (a more scientific approach to language understanding) in the twentieth century has paved the way for linguistic explanations of language in general and language contact (bilingualism) in particular.

On a purely statistical basis, bilingualism is undoubtedly a fact and a natural

[2] The terms 'bilingualism' and 'bilingual' will be used to cover 'multilingualism' and 'multilingual' respectively.

way of life for the majority of the world's population. According to Crystal (1987a), around 5000 languages co-exist in fewer than 200 countries, although this figure does not depend on official statistics mainly because there is no official account of them. Indeed, the widespread belief within western societies is that monolingualism is the norm rather than bilingualism. The fact that there are probably more bilinguals in the world than speakers of only one language has been pointed out by Oksaar (1983) among others. Before turning to 'What causes bilingualism?', however, it may be advantageous to consider the widespread impression already mentioned in relation to the official status of bilingualism.

Most countries of the world have not officialized the bilingual status of their people for various reasons, the most salient of which is politics; this, for example, is the situation in Nigeria and other African countries. It is therefore not surprising to find that Hornby (1977) emphasises not only the psychological and social implications of bilingualism, but goes further by including the educational and political significance of bilingualism in his discussion. At the other extreme there are some officially bilingual countries in the sense that they have two official languages, national and regional (e.g. Canada, Switzerland, and Belgium). This, of course, does not imply that all the citizens of an officially bilingual country use, or even know, more than one official language. Crystal (1987a:360) has given some clarification to this issue by stating that :

"It is an interesting irony that there may be more bilingual people in an officially monolingual country than in an officially bilingual one".

The importance of this distinction lies in the fact that the former category constitutes the bilingual majority and that this has possibly helped to create widely held

impression of a monolingual majority. Therefore, if we study speakers regardless of the policies of the government under which they live, we would expect a completely different picture to emerge supporting Crystal's idea that there is no such thing as a totally monolingual country.

2.1.2 Factors Resulting in Bilingualism

The phenomenon of bilingualism has existed as long as language. Language balance is usually changing either spontaneously or because of external impacts on it; thus we find that the level of bilingualism, by necessity, is increasing in some areas (e.g. Sweden since the Second World War) and decreasing in others (e.g. U.S.A.). The important point to make in this context is that it may be quite hard to ignore the reasons which have formed the bilingual situation because of their obscure historical origins, as suggested earlier in this chapter. Usually a bilingual situation is a result of the people's own choice, but in many other cases it has been forced upon them by other circumstances. Before turning to the factors that may result in bilingualism, it seems to me that it is important to mention that these factors may not just exist individually but also collectively. Now let us consider what the facilitators of this emerging phenomenon are.

Economic factors can be highly influential in forming bilingual situations because very large numbers of people have migrated to different places trying to find work and to improve their standard of living. The linguistic diversity in the U.S.A. and the increasing proportion of bilingualism in modern Western Europe can be primarily ascribed to economic factors.

Political and military acts such as annexation and resettlement have had an immediate and substantial linguistic impact. For instance, refugees have to learn

the language used in the new community; the indigenous population of an invaded country will tend to adopt the invader's language so that they form a link between the two speech communities in order to prosper, and hence they have to be bilingual.

It is also significant to realize that, in some countries, learning another language is possibly the only means of getting access to knowledge. It should not be overlooked, however, that the factor of education may bring with it motivation to learn a second/third language. There is enough evidence in history which we can rely upon to support this claim, such as, for example, the use of Latin in the Middle Ages and the present-day international use of English. Thus the study of the educational factor is of considerable importance in the study of bilingualism.

It can reasonably be assumed that a desire to identify with a social group or ethnic culture means learning the language of the group in question. Positive attitudinal dispositions can encourage the learning of the other group's language; whereas:

> *"Resentment towards a particular language community can also lead to antipathy towards its language and impede the learning of that language"*
> *(Beardsmore 1986:100).*

Thus, the engagement of language learning with positive attitudes towards the target language group implies the promotion of bilingualism.

The religious factor can also be of great importance in promoting bilingualism. It is necessary to recognize how it promotes bilingualism in two completely different ways. On the one hand, some people probably wish to live in a place which has religious significance to their own faith, as is the case with some Jews who have

settled in the Holy Land. On the other hand, other people have to leave their country because of its religious intolerance or oppression, as was the case with the non-Armenian Christians of Anatolia in Turkey after the First World War. In both cases, a new language had to be learned.

Furthermore, new language contact situations can emerge from natural disasters. Accordingly, geographical mobility, which frequently results from such events as floods, famine, etc., can be as influential as any of the other factors already discussed in promoting bilingualism among the settlers. In fact, the movement of groups or individuals from one location to another has been defined as 'voluntary' and 'involuntary' migration (Lewis, 1981). Moreover, Lewis presents the idea that bilingualism is the characteristic of both voluntary and involuntary migration. The case of the Celts, for instance, who spread voluntarily from their original home in southern Germany and part of Bohemia into almost all of Europe and the British isles, shows how important bilingual communities have been created and how their languages are still represented in Britain and France today. Equally all forms of involuntary migration (e.g. deportation, evacuation, slavery and forcible resettlement) involve a high impact on language as it recorded in history. For instance, the exodus of 400,000 Armenians to USSR (forced by the Turks) helped in establishing several bilingual communities not only in Georgia but in many other areas outside Armenia in the Soviet Union.

In general the above representation of the factors and types of migration implies to a large extent that bilingualism does not usually exist within a vacuum.

2.1.3 What Is Bilingualism?

Before turning to tackling the definitions, varieties and types of bilingualism,

it is necessary to consider the question 'What is a bilingual?'.

2.1.3.1 What Is a Bilingual?

There has been a remarkable shift in the study of ethnic minorities including the study of the associated phenomenon of bilingualism. Bilinguals' language behaviour has received marginal scientific interest as a consequence of an already established claim that bilinguals themselves are marginal personalities. So, the marked emphasis in the study of the language behaviour of bilinguals has shed some light on the importance of linguistics as a whole in investigating the phenomenon of bilingualism.

A speaker's repertoire typically includes a single language with one or more of its varieties, but it is not unusual also to have other languages with some of their varieties included. We thus infer that being bilingual means that two languages are available on a par to the bilingual. Obviously we can admit, as a theoretical ideal, the possibility of having a high level of proficiency in two languages as a native monolingual has in one. But this criterion does not allow for the inclusion of those who have not achieved native-like proficiency in either of their languages. For this reason, some scholars have been inclined to show moderation by considering the bilingual's linguistic ability as a continuum in which only a minority will be capable of approaching the theoretical ideal. Spolsky (1988:100) refuted the widespread impression of bilinguals when he agreed with Haugen's view:

"So we are unhappy with the common meaning ascribed to the term bilingual; as Haugen (1973) points out, if we count as a bilingual only someone with equal and native command of two or more languages, we exclude the vast majority of cases and are left with the least interesting".

2.1.3.2 Multidisciplinary Scanning of Bilingualism

A number of researchers have investigated the phenomenon of bilingualism and different interpretations have satisfied different disciplines. Beardsmore (1986:41) has found that:

"Bilingualism is a relative concept with no clear cut-off points".

Bilingualism is an elusive but at the same time familiar concept; it is a word known to everyone but no one can give an adequate definition. Therefore, it seems that there is no clear answer to the question, 'What characteristics define a bilingual?', but the available findings indicate the need for further investigation of the phenomenon of bilingualism. For instance, influence from the fields of psychology and linguistics has extended the understanding of language learning and language behaviour. Researchers have gained new perspectives on many important issues by having second language research included in psycholinguistics. In turn, researchers and teachers of second languages, who have become acquainted with the achievements of psycholinguists, have gained new perspectives on bilingualism. Therefore, it should be clear that there is a kind of subtle reciprocal relationship between different disciplines and bilingualism. The importance of bilingualism, moreover, lies in a knowledge of the many facets of its effects. These facets carry influence in three areas: the languages involved, the individual, and the society. Due to the consideration of the psychological and social implications of bilingualism, it has manifested its significance not only as a national issue but, more broadly, as an international one.

Before launching into a discussion of what bilingualism is, it is necessary to mention that 'bilingualism' has been to date imprecisely defined despite the many

attempts to produce an exact definition. Anderson and Boyer (1970:8) concluded from the seminar held in Canada in 1967, dedicated entirely to the description and measurement of bilingualism, first that:

> *"... the only agreement among its various users is that it refers to the knowledge and use of two languages by the same person".*

Secondly,

> *"Within this framework, however, the major problem is that bilinguals differ widely both in their knowledge and in their use of two languages they master " (ibid:9).*

In addition, Fantini (1985) has found that the concept of bilingualism has become a difficult theme because most scholars have studied it primarily from their own bias— within a linguistic, a sociological, or a psychological perspective— rather than interrelatedly. But the new general increased interest in applied linguistics, which involves the developed fields of psycholinguistics and sociolinguistics, is to try to understand the diverse ways in which language and behaviour interact.

2.1.3.3 Definitions of Bilingualism

The notion of bilingualism, as pragmatic investigation in the natural sciences, produces similar difficulties with precision of definition. Yet this has in no way prevented investigators in the fields already mentioned from building up theories and conducting research and discussions.

(i) Definitions Based on Competence

One of the most important distinctions to be made as the basis of any discussion in the field is that between maximal and minimal definitions of bilingualism.

Haugen's definition (1953:7):

"Bilingualism is understood... to begin at the point where the speaker of one language can produce meaningful utterances in the other language".

This definition can be categorized as a minimal interpretation of the notion of bilingualism. On the other hand, Bloomfield's viewpoint (1935:55–56):

"In the cases where this foreign-language learning is not accompanied by the loss of the native language, it results in bilingualism, native-like control of two languages".

The viewpoint of writer Maximilian Braun (in Haugen, 1968), who demanded active and completely equal mastery of two or more languages, strongly underlines the maximal interpretation of bilingualism. It is clear therefore that Haugen has tried to set a lower limit than Bloomfield and Braun whose bilinguals are rare to find, if they exist at all.

We can see that the definitions fluctuate between two extremes, from equal mastery of a second language to at least some knowledge in a second language or even one skill (e.g. reading). Baetens-Beardsmore (1986:42) has contrasted the minimalist and maximalist understanding of bilingualism and strengthened the concept which underlies the relativistic status of bilingual ability. Accordingly, bilingualism does not constitute an absolute but rather a continuum where the persons' linguistic skills vary in the two or more languages involved.

The remarkable common characteristic of these definitions and others like Macnamara's, Haal's, Pohl's, and Diebold's, which are based on competence, is that they are either too narrow to find anybody fulfilling the necessary requirements, or

too broad so that everybody is practically bilingual. Skutnabb-Kangas (1981:85) has suggested that these are not characteristics but are difficulties that bilingualism defined by competence usually faces. She identifies further difficulties as :

> *"2. that it is difficult to specify accurately the level of competence the definition requires in subsidiary areas of linguistic ability, 3. that they mostly do not specify whose linguistic ability the bilingual individual's competence is to be compared with, and that they do not decide whether the norm is to be the competence of the monolinguals or the competence of other bilinguals, and, 4. that they often define the level of linguistic command required only as it applies to L2, and take for granted a complete command of L1, or that they implicitly suggest balanced bilingualism as the ideal".*

(ii) Definitions Based on Function

Generally speaking the everyday use of the term 'language' involves several different senses, and it is linguistics which usually manages to distinguish them carefully. It may refer, at its most specific level, to the concrete act of speaking in a given situation. Putting it differently, it may refer to the Saussurean notion of 'parole' or 'performance'.

At the beginning of the 1960s, more attention began to be given to the function of two languages in and for the bilingual speaker, in a bilingual society. Researchers sought to describe the phenomenon of bilingualism with more concentration on the aspect of function. It is wise to start with the classic definition by Uriel Weinreich in order to reveal that there had been some interest in the function of two languages in a bilingual society before the 1960s. To be considered bilingual, Weinreich (1953:1) recognizes that :

"The practice of alternately using two languages will be called BILINGUALISM, and the persons involved, BILINGUALS".

His position is apparently a neutral one in defining bilingualism, in comparison with other definitions, for example those based on competence, and those based on a minimal versus maximal distinction (cf Haugen's, 1953, and Bloomfield's, 1935) because it includes the widest possible population. This broad, vague concept of bilingualism has also been subscribed to by Albert & Obler (1978:5) who state that:

"...it is reasonable to expect that distinctive subgroups are to be found among all the people who alternatively use two languages".

The function-orientated view of bilingualism reflects a marked change in understanding the given phenomenon away from a purely linguistic perspective towards a more sociolinguistic one. This change of emphasis is the result of an interest in the sociological study of ethnic minorities. As a consequence, the study of the language behaviour of bilinguals and 'minorities' has gained great importance in the field of linguistics as a whole and has become a key issue particularly in sociolinguistics. Mackey (1970:554– 555) stresses the social domain in his attempt to manifest his function- orientated view of bilingualism. He states that:

"Bilingualism is not a phenomenon of language; it is a characteristic of its use. It is not a feature of the code but of the message. It does not belong to the domain of 'langue' but of 'parole'.... If language is the property of the group, bilingualism is the property of the individual. An individual's use of two languages supposes the existence of two different language communities; it does not suppose the existence of a bilingual community.... The alternate use of two or more languages by the

same individual".

The claim that definitions by function vary much less than those by competence can to a large extent be justified by examining Oksaar's and Rivers' views of bilinguals. Oksaar (1971:172, quoted in Skutnabb-Kangas, 1981:86) considers a bilingual as one :

"who in most situations can freely use two languages as means of communication and switch from one language to the other if necessary".

Whereas for Rivers (1969:35–36) a bilingual child is one who :

"... is able to understand and make himself understood within his linguistic and social environment (that is, as is consistent with his age and the situation in which he is expressing himself)".

These definitions apparently share the same element of parallelism, except that Oksaar's definition stresses on the one hand the idea of automatic code-switching, while on the other it combines competence and function.

Some scholars tend to interpret functional bilingualism minimally or maximally as has already been done with bilingualism based on competence. The importance of this distinction lies, for instance, in its ability to consider languages for specific purposes (e.g. nursing English) as a minimalist interpretation of functional bilingualism. The minimalist interpretation of functional bilingualism does not involve an advanced linguistic knowledge in the second/third language on the part of the bilingual him/herself. S/He is defined as bilingual as long as s/he can perform a set of limited activities in a second/third language with a limited linguistic knowledge— this is relatively easy to acquire. I believe that Rivers' definition

supports the minimalist interpretation of functional bilingualism.

The move towards the maximalist interpretation of functional bilingualism indicates a move towards the widely accepted view of being bilingual. This may implicitly mean that the interpretation concerned highlights the bilingual's ability to conduct satisfactorily a wide range of activities in different situations. The very fact that a person is a bilingual usually reflects signs of interference in his/her output on different linguistic levels, such as phonology, lexis, morphology, and syntax. This vision of bilingualism accounts for the fact that unless these signs hinder communication between the interlocutors they do not get in the way of functional bilingualism. Thus from a communicative standpoint, appropriateness of language use is the ultimate aim. It may well be true that many definitions of bilingualism, like Weinreich's and Oksaar's, can represent the maximalist interpretation of functional bilingualism.

The study above has shown that a number of researchers have given variable definitions of bilingualism but it is Hornby's perspective which suggests a way of tackling this variation in definitions as :

"The best way to deal with this variation in definitions would seem to be to recognize that bilingualism is not an all-or-none property, but is an individual characteristic that may exist to degrees varying from minimal competency to complete mastery of more than one language".

Hornby (1977:3).

2.1.4 The State of Being Bilingual

In the section which follow, we will see that the state of being bilingual goes

hand in hand with the idea of having variation in definitions. Similarly, there are many different states of bilingualism that we shall discuss in the following. However, we need to mention that the following classification is borrowed from Albert & Obler (1978).

2.1.4.1 Balanced Versus Dominant Bilinguals

The term 'balanced' bilingual was first introduced by Lambert, Havelka, & Gardner (1959). This term, however, reveals itself as being more of an ideal than a fact on the basis that bilinguals generally are probably not fully competent in both languages. They can be more fluent and more at ease in one of their languages than in the other. This understanding has allowed the term 'dominant' bilingual to emerge. It conveys very well the fact that someone is more fluent in one language than in another. Balanced bilingualism (i.e. equilingualism as coined by Beardsmore, 1986) has been criticized by Fishman et al (1971, quoted in Beardsmore, 1986:9) and may implicitly support the phenomenon of dominant bilinguals:

"Bilinguals who are equally fluent in both languages (as measured by their facility and correctness overall) are rarely equally fluent in both languages about all possible topics".

It is in fact a widespread popular impression that it is highly unusual to maintain proficiency in more than one or two languages at a time. This situation could allow a bilingual to have a single dominant language and a dormant language/languages. It occurs especially in cases where a non-dominant language/languages has not been used at all for a long time. 'Dormant' bilinguals is a term used by Grosjean (1982:239) to mean that one or more of the bilingual's

languages is no longer used regularly. No or little opportunity to keep a language actively in use usually results in difficulty in communication. Hence, it has been considered by Baetens-Beardsmore (1986:22) as an example of 'recessive bilingualism'. Grosjean (1982:238) has highlighted some of the dormant bilingual's characteristics: hesitancy in language production of appropriate words and expressions; extensive code-switching which is often accompanied with unconscious borrowing of whole expressions from the dominant language; defective intonation, stress and individual consonants; and considerably defective writing skills because the person has not maintained these skills. In other words, he has found that :

"...language comprehension suffers much less; apart from new terminology and new colloquialisms that the person may not know, he or she usually has no problems retaining a good understanding of the spoken language".

A good example to illustrate this situation can be found in the case study of Galloway (1978). It deals with a Hungarian who learned seven languages during his life (Hungarian, Polish, Romanian, Yiddish, German, English, and Hebrew) but five of them became dormant languages at the time of the study in the U.S.A. English and Hungarian were only used regularly and the others were dormant and in some cases almost forgotten.

2.1.4.2 Compound Versus Coordinate Bilinguals

The importance of this distinction is reflected in a large body of research within the general fields of linguistics and psycholinguistics. Ervin and Osgood (1954) have found that in the 'compound' bilinguals there is almost a complete merger of the semantic meanings of the words in their two languages. Whereas in cases of 'coordinate' bilinguals, the semantic meanings of their two languages are

considered distinct. Awareness of the concept of com-co-ordinate bilingualism, as either two merged or independent systems, has contributed to having this concept reconsidered psycholinguistically. In other words, we find in the literature that the psycholinguistic concept of language dependence and language independence are associated with the concept of com-co-ordinate bilingualism. The psycholinguistic explanation is that true 'compound' bilinguals probably have two languages in one system, whereas true 'coordinate' bilinguals have two languages in two separate systems. According to Fishman (1966:128) the 'compound' bilingual :

> *"... thinks only in one of his languages, usually in that which is his mother tongue... based upon a neurological organization fused so that one language depends substantially on the same neurological component as the other".*

On the other hand, the 'coordinate' bilingual:

> *"... keeps each of his languages quite separate. He thinks in X when producing messages (to himself or to other) in X, and in Y when producing messages in Y."*

Hence, it is not clear if this classification is real and further proof is required from neuropsycholinguistics and related fields.

2.1.4.3 Additive Versus Subtractive Bilinguals

Several other studies have examined the state of 'additive' and 'subtractive' bilinguals. According to Lambert (1974) language acquisition usually brings to the speaker a set of cognitive and social abilities. But these abilities would not be considered by the 'additive' bilinguals as a threat to the linguistic and cultural entities of their first language. Therefore, second language acquisition is regarded

by Baetens-Beardsmore (1986:22):

"as an extra tool for thought and communication".

It should be pointed out in this context that such a positive attitude can probably enhance the speaker's communicative ability. We can support the concept of 'additive' bilingualism with a few illustrative examples from ancient and modern history. We can refer to the 'additive' bilinguals in the ancient Greek and Roman civilizations who were highly regarded, and to the present-day Afrikaners and most of the Jews in South Africa and Israel respectively.

The term 'subtractive' bilingual has been used by Lambert (1974) to refer to bilinguals who avoid the use of their first language, since the new language would subtract from it. Therefore, the second language is usually seen as a threat to their first language and:

"instead of producing complementarity between two linguistic and cultural systems, there is competition"
(Beardsmore, 1986:27).

Here we tend to agree with Hornby (1977:19) that:

"Their degree of bilinguality at any time would be likely to reflect some stage in the subtraction of the ethnic language and the associated culture, and their replacement with another."

The practice among certain ethnic minority groups of not using their own languages but rather their national languages may actually be due to various sorts of pressure including educational policies and social pressures. The present-day Copts in Egypt whose forefathers gave up the use of their original language because of

such pressures is one example of this practice.

2.1.5 Chomsky's Ideal Speaker/Hearer and Bilingualism

Chomsky drew a fundamental distinction between a person's knowledge of the rules of a language and the actual use of the language in real situations. This distinction is similar to Saussure's distinction between 'langue' and 'parole'. Knowledge of the rules of a language is referred to as 'competence', while the use of that language is referred to as 'performance'. Chomsky's argument is that linguistics should be concerned with the study of competence and not become restricted to performance. He believes in the ability of a speaker of any language to create and recognize novel sentences, and to identify performance errors irrespective of his/her level of intelligence. In other words, his frame deals with the linguistic competence of an ideal monoglot speaker/hearer. Relying on the general understanding of the phenomenon of bilingualism, we notice that applying the Chomskyan frame of reference is very likely to be limited in reflecting the linguistic competence of a speaker/hearer who is a polyglot. However, Baetens-Beardsmore (1986:125) suggests that Chomsky's ideas can be, with minimal modification, extended to account for early simultaneous bilinguals since :

"the nature of the performance in the two languages and the processes of acquisition (if the extra-linguistic circumstances have been favourable) have much in common with circumstances of children learning only one language".

So, late bilinguals cannot be definitely considered 'native-speakers' of their L2 because, on the one hand, even the highly competent late bilinguals manifest traces of interference in the output of one or both languages. On the other hand, s/he is not necessarily capable of discovering in his/her output what looks bilingually marked

or ambiguous, something which can be pinpointed by a monoglot. Therefore, this position of late bilingualism, including various different types of bilinguals, cannot be reconciled with the Chomskyan interpretation of linguistic competence.

2.1.6 Is the Phenomenon of Bilingualism Beneficial or Detrimental?

Many observers appear to have erroneously attributed to bilingualism personality problems in addition to linguistic ones. This is the case in most of the early studies in 1920s and it is not uncommon in a few studies today. Thus the question of the relationship between bilingualism on one hand and psychology and linguistics on the other is important. Many other observers take the opposite view and ascribe the linguistic and psychological troubles which some bilinguals have to socio-economic disadvantages. For instance, Baetens-Beardsmore (1986:110) has seen that frequent change of residence, insecurity in the home and social life, ghetto-like isolation:

"... to be the origin of the intellectual handicap that the bilinguals manifested in comparison with monoglots".

Perhaps the description of the positiveness of bilingualism can be pointed out through the results of various studies. This implicitly permits us to accept the possibility of having bilinguals differ from monolinguals just in controlling a second language. Evidence from the language-related skills of bilinguals who have an advantage over monolinguals has been reported by different researchers. Lerea and LaPorta (1971) have found that bilinguals are better skilled in imitating sounds and setting up auditory associations than monolinguals. On the other hand, the bilinguals of Slobin's (1968) phonetic symbolism task in which they also guessed meanings of unknown foreign words did better than the monolingual subjects. The

findings of Jakobovits & Lambert (1961) that bilinguals show less semantic satiation than monolinguals can be consistent with Ianco-Worrall's (1972) which show that bilinguals use more semantic bases than phonetic ones in order to examine word similarity. On the basis of these research findings, bilinguals usually seem to develop better language skills than monolinguals.

Skutnabb (1981) and Cummins (1976a, b, 1977) have attributed the fact that bilinguals have better language skills (oral and written) to their more highly developed cognitive abilities such as the analytical one. According to Skutnabb (1981:231) it must be clearly seen that :

"explanations of bilingual children's greater analytical ability suppose that bilingual children, in their observation of two languages (a form of contrastive analysis) and in their endeavour to keep them apart, come to pay more attention to language itself, its structures and the central properties defining it, than do monolingual children".

An additional advantage of this analytical ability has been noticed in their sensitivity to non-verbal communication. Various tests like the one done by Ben-Zeev (1975) have revealed how bilinguals are better than monolinguals in interpreting gestures, intonation and facial expressions. Perhaps it should be pointed out that other experiments to measure the effects of bilingualism on cognitive development have reached negative conclusions. Balkan (1970, quoted in Baetens-Beadsmore, 1986:109), for instance, has described the extent of the linguistic handicap which may be experienced by bilinguals. However, linguistic ability is only one form of cognitive representation. Albert & Obler (1978) has disagreed with the assumption of cognitive advantage of bilinguals over monolinguals and proposed instead

differences in cognitive style. He has further added that:

"It is not impossible that these differences in cognitive style are related to differences in brain organization for language"
(Albert & Obler, 1978:205).

Therefore, it is a coincidence that we have bilingualism working positively in particular cases and detrimentally in others. Previous research has led to conflicting results because some of them have not accounted for the socio-cultural pressures affecting bilinguals psychologically and linguistically.

2.1.7 Composite Study of Bilingualism

The elusiveness of the phenomenon of bilingualism can be compared to the difficulties sometimes involved in pragmatic investigation in the natural sciences in order to find precise definitions. This implies that research and discussion should be continuously conducted in the fields concerned.

Hornby (1977:8) has attributed the difficulty which accompanies the study of bilingualism to the fact that it cannot be contained within the boundaries of any single discipline as we have already seen from the definitions provided earlier. Bilingualism, thus, is generally approached from a multidisciplinary perspective; from a linguistic point of view dealing with interference, interpretation and code switching; from a neuropsychological and neurolinguistic point of view looking comparatively at the ways bilinguals and monolinguals store languages and effects of this on cognition; from the point of view of the sociology and psychology of language, focusing mainly on its effects on individuals and society; and finally from a pedagogical point of view linking bilingualism and both school organization and

media of instruction. Mackey (1968:583) expressed the need to have the discipline in question as a framework to give bilingualism an adequate description:

"Bilingualism cannot be described within the science of linguistics ; we must go beyond.... For each of these disciplines bilingualism is incidental, it is treated as a special case or as an exception to the norm. Each discipline, pursuing its own particular interests in its own special way, will add from time to time to the growing literature on bilingualism ... What is needed, to begin with, is a perspective in which these interrelationships may be considered".

2.1.8 Summary

No matter what interpretations are given to bilingualism, it is important to bear in mind that it is as normal a phenomenon as monolingualism. For the individual bilingual the experience is neither as difficult nor as traumatic as it is sometimes perceived.

2.2 Neurolinguistics and Bilingualism

2.2.1 Introduction

The past one and half decades have shown an increasing interest in the field of neurolinguistics by linguists. The term 'neurolinguistics' has been differently defined by various linguists and investigators. For instance, Whitaker et al (1977:250) has defined 'neurolinguistics' as the study of :

"the relationship between language and the central nervous system".

Hecan and Dubois (1971:85), on the other hand, have defined the term from the perspective of language handicap and stated that:

"La neurolinguistique peut être définie comme l'application des méthodes et des modèles de la linguistique, à l' étude des perturbations des réalisations du langage entrainées par des lésions corticales".

Without going into more detail, neurolinguistics is broadly construed as the study of the relations between language and brain. The main goal of neurolinguists, thus, is on one hand to clarify the neurological bases for language and speech and, on the other, to explain the nature of the processes implicated in language use. However, variations in definition can probably be attributed to the fact that neurolinguistics is a broad field of study which requires a multidisciplinary approach to language and brain function. In other words, the lack of unanimous agreement to define 'neurolinguistics' comes from the difficulty in delineating and distinguishing the area concerned from clearly related areas, such as psycholinguistics, patholinguistics, and neurophysiology.

Roman Jakobson (1971) was probably the first linguist to acknowledge the international contributions of both fields, linguistics and language handicap. Putting it differently, linguistics can aid the understanding of the deficient linguistic output subsequent to brain damage. Conversely, the language handicap itself can provide insights into the linguistic theories as well as being a good testing ground for theoretical linguistic assumptions. The insights gained from Jakobson's research on language dissolution lead us to believe that any language system has inherent structural principles. His claim further implies that any language breakdown must occur systematically. This shift of interest by linguists to study languages neurolinguistically has recently influenced linguists to study bilingualism from the same perspective. A comprehensive investigation in the recent linguistic literature related to bilingualism will provide us with evidence that bilingualism is steadily

gaining important ground not only in sociolinguistics and psycholinguistics but also in neurolinguistics. The present shared standpoint among the vast majority of researchers like Whitaker (1989) is that the extensive research publication of Albert and Obler's (1978) *The Bilingual Brain* has been responsible for the current surge of interest in the neurolinguistics and neuropsychology of bilingualism. We can also add in this respect that the idea of mutual exclusiveness between bilingualism and the disciplines concerned does not exist. In other words, the study of bilingualism on one hand has gained insights from every relevant discipline and on the other it has proven a fertile testing ground for the disciplines themselves.

The neurolinguistic involvement in explaining the phenomenon of bilingualism would suggest the necessity to seek experimental and clinical data from neurologically-intact and-damaged individuals. Thus normal and abnormal language processing seem to play a role in understanding bilingualism, but to many investigators like Whitaker (1978:31):

"The brain-damaged bilingual patient will continue to be an important source of information on the ways in which different languages are learned and thus represented in the brain".

In this regard neurolinguistics usually addresses the fractionation of cognitive or linguistic systems in order to account for the actual constituents of languages as localized in the brain. Consequently, there has been renewed interest in the study of polyglot aphasia, as noticed by a number of reviews published recently on this topic (cf. Albert and Obler, 1978; Whitaker, 1978; Paradis, 1977). Nevertheless, the pertinent relationship between aphasiology and the neuropsychological aspects of bilingualism has a long history which can be possibly dated from the time of Broca

in the early 1860s. But the most remarkable study on polyglot aphasia in the nineteenth century and more specifically in 1895 is Pitres', entitled *Etude sur l'aphasie chez les polyglottes.* Paradis (1987) has emphasized this relationship by giving a summary of the evidence provided by a comprehensive investigation of aphasia in bilinguals. Accordingly, it will provide empirical evidence for the hypotheses related to the representation of two languages in the same brain. Moreover, it will help us to understand the organizing principles which underlie language comprehension and production. It will thus contribute important elements towards a linguistic theory in general and a theory of bilingualism in particular.

In conclusion, it is, of course, conspicuous that a person can learn and use more than one language. Nevertheless, from a neurolinguistic viewpoint, it is also important to understand the brain mechanisms that specialize in language and how the brain can keep several independent systems separate. Therefore, the engagement of bilingual subjects (normal or brain-damaged) in neurolinguistic investigations will probably help in understanding whether different languages occupy different cerebral regions; and secondly, if the neural organization of the bilingual's linguistic systems differ from the monolingual's. In other words, bilinguals are a very rich potential source for neurolinguistic investigations. It should be clear that in order to understand the neurolinguistic viewpoint, which has been outlined in the preceding section, we need to consider the human brain anatomically.

2.2.2 Human Brain Regions

The human brain has characteristically different regions with anatomically different structures. Usually each structure makes a distinct contribution to different behaviours. But to understand this contribution, it is vital to comprehend the dis-

tinct regions of the human brain anatomically, as illustrated by figures borrowed from Crystal (1987a:258).

The cerebrum, which consists of the left and right cerebral hemispheres, forms the largest part of the brain. The hemispheres are of similar size and the brain stem connects them to the spinal cord. As it is illustrated by figure (2.1), the brain stem consists of midbrain, pons, and medulla oblongata. The cerebellum is located at the back of the pons.

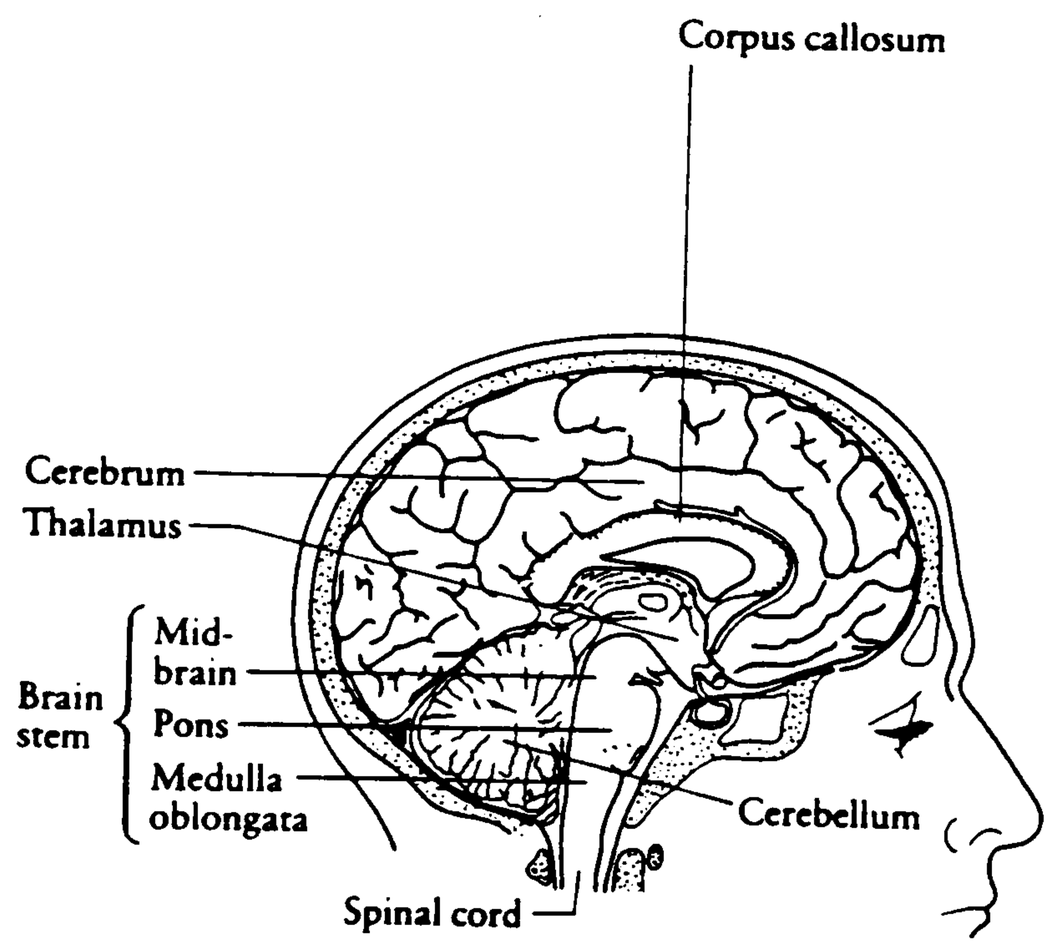


Figure 2.1: Human Brain Anatomy

The cerebrum in general and the cerebral cortex in particular has received most of the researchers' attention for its functional importance. The cerebral cortex, which forms the grey layer of nerve cells on the surface of the cerebrum, is involved in voluntary movement, in the intellectual functions, and in decoding information from the senses. The white substance beneath the cortex is responsible for transmitting signals between the cortex and the brain stem, and between the different parts of

each hemisphere.

The cortex itself is a series of convolutions, or gyri separated by fissures or sulci. A section through the brain, as in figure (2.2,a,b) can show how the median longitudinal fissure separates the two hemispheres but does not run the whole way through the cerebrum. The corpus collosum, containing millions of

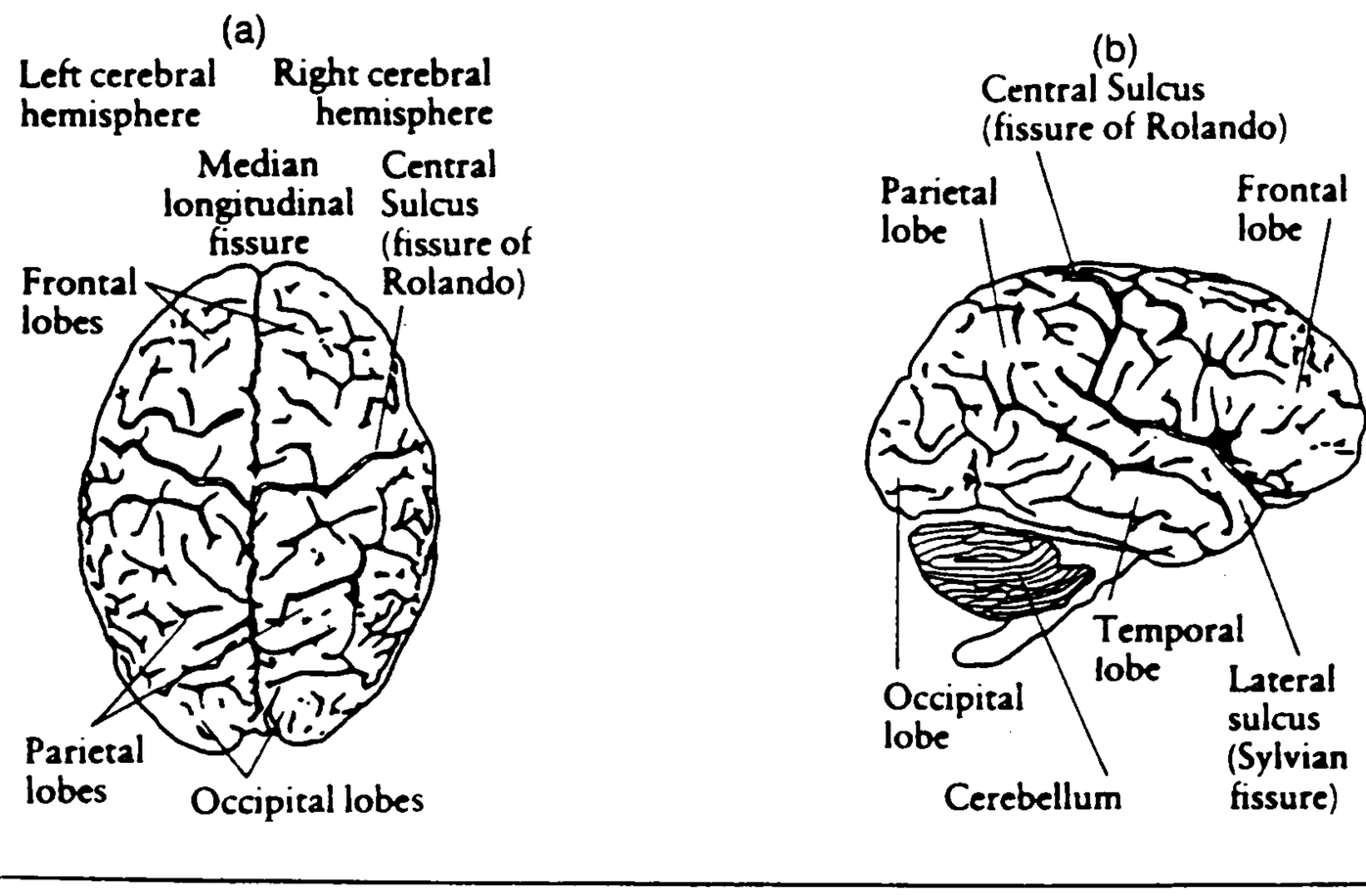


Figure 2.2,a,b: The Main Anatomical Areas

fibres, joins the two hemispheres together and functions as information transmitter from one hemisphere to the other. The brain seen from top as in figure (2.2,a) and from bottom as in figure (2.2,b) show the other two main fissures, central sulcus, or the Rolando fissure, and the lateral sulcus, or the Sylvian fissure successively. They clearly divide the two hemispheres into four lobes, frontal, temporal, parietal, and occipital.

An important relationship exists between the anatomy of the brain and its function. Each hemisphere transmits information to and analyses sensory input

from the opposite side of the body. Handedness is thus said to be related to the anatomical fact of the two hemispheres, which has been considered as a major research topic for over a century. Furthermore, the alleged anatomic symmetry of the two hemispheres was a compelling reason for assuming their innate functional equivalence in language processing. But the fact remains that this hypothesis has not gained enough clinical and experimental support.

The above simplified explanation of the human brain anatomy will assist our neurolinguistic understanding of bilingualism in the following sections.

2.2.3 Bilinguals are not Two Monolinguals

The relevant literature reflects two views of bilingualism—monolingual, or fractional, and bilingual, or holistic. Before presenting these two views we should stress the importance of having them clearly understood because of their impact on the general understanding of bilingualism.

2.2.3.1 The Monolingual View of Bilingualism

The monolingual/fractional view of bilingualism holds that the bilingual's linguistic repertoire is largely similar to the repertoire of two corresponding monolinguals. According to Grosjean (1989) the prevalence of this view among researchers is associated with the prevalence of a strong monolingual bias in the language sciences. In other words, having the monolinguals considered models of 'normal' speaker-hearers, the study of bilingualism has adopted, sometimes with slight modifications, the methods used in investigating the linguistic repertoire of monolinguals.

However, it has been unwise to adopt the monolingual approach to study-

ing bilingualism because of a number of negative consequences as discussed by Grosjean (1985) and summarized in Grosjean (1989). First, the maximalist view of bilingualism, which indicates an equal mastery of two languages in terms of fluency and balance, ignores the vast majority of people who use two languages but do not fulfil these requirements. Accordingly, such a description and evaluation of bilinguals implies that the 'real/ideal/balanced/perfect' bilingual is the one who shows equal language competence in both languages as defined by Bloomfield (1933), and Thiery (1978).

The second consequence of the monolingual view is the application of monolingual standards to appraise bilinguals' language output. An analogy of the appraisal standards shows that they are not profiles but mere tests, which have hardly considered the bilingual's differential needs for the two languages or the differential social functions of these languages as suggested by Fishman (1965). Those who have conducted monolingual tests have regarded the bilingual person as a monolingual human communicator and have failed to regard him/her as a bilingual human communicator. Unfortunately, this highlights the inappropriateness of the application of monolingual tests to bilingual language output and it further reflects the necessity of either innovating bilingual tests or considerably adapting the monolingual ones.

The third consequence of the monolingual view is the emergence of the concept that bilingualism is an exceptional phenomenon, when, in fact, half the world's population is bilingual. Despite innumerable studies concerning the detrimental or positive effect the knowledge of two languages has upon the psychological and cognitive development and functioning of bilinguals, research has not been able to distinguish bilingualism as the sole factor in isolation from factors including

linguistic, sociocultural, socioeconomic, etc.

The fourth consequence is that the contact of two languages in the bilingual's linguistic repertoire is accidental and anomalous. The monolingual view often assumes that because the two language systems in bilinguals are autonomous, contacts (covert or overt) between them should be rare. Therefore the assessment of any form of contact (interference, borrowing, code-switching) has been given a simplistic interpretation as accidental. However, we are required to study in detail how bilinguals, similar to monolinguals, implement their linguistic and communicative competences of the two languages separately or together, depending on the speech mode they are in. This implementation will be possible for the simple reason that a bilingual is not two monolinguals in one person.

The fifth consequence of the monolingual view can be detected in linguistics, psycholinguistics, neurolinguistics, and speech therapy research. In spite of the fact that they all have conducted research on bilingualism, the bilingual's languages have been investigated separately and not collectively. Linguists, in general, have paid little or no attention to the bilingual's linguistic competence from a Chomskyan perspective. The Chomskyan frame of linguistic competence of an ideal monolingual speaker-hearer is thought likely to be limited in reflecting the linguistic competence of a bilingual speaker-hearer. This limitation in extending the Chomskyan frame to bilinguals is ascribed to an already accepted notion that a bilingual can never be an 'ideal speaker- hearer' as is supposedly the case with a monolingual. The psycholinguistic research on bilingualism has also covered the bilingual's languages separately. This research usually seeks to illuminate the activation of the bilingual's individual languages separately. Little attention has been paid to the simultaneous activation of the languages in the bilingual's repertoire.

In other words, they have showed little interest in the study of the phenomena of code-switching and borrowing. In addition, we can note in the fields of neurolinguistics and speech therapy that standard monolingual tests are still used with bilingual subjects. This indicates that inappropriate bases are used to examine bilingual subjects; the sociolinguistic and psycholinguistic language skills of bilinguals are rarely taken into account.

The final consequence can be observed on an individual level. Bilinguals, as individuals, often have a negative attitude towards their linguistic state of being acquainted with two languages. As a consequence, some of them criticize their language competence which, of course, results in an inadequate evaluation of it. Others try to achieve monolingual norms or hide their weak knowledge of either language.

Having looked at the understanding and the consequences of the monolingual view, it is important to look at the bilingual or holistic view of bilingualism.

2.2.3.2 The Bilingual View of Bilingualism

The bilingual/holistic view has led to a more precise understanding of bilingualism. It encourages researchers to look at the bilingual person as an integrated whole and not as two separate parts. Grosjean (1989:6) believes that :

> *"The bilingual is Not the sum of two complete or incomplete monolinguals; rather, he or she has a unique and specific linguistic configuration. The coexistence and constant interaction of the two languages in the bilingual has produced a different but complete linguistic entity".*

In this respect we should keep in mind that the number of areas of study affected

by this view is probably identical with the understanding of the monolingual view as already discussed under section 2.2.3.2. However, viewing the bilingual as a unique and specific speaker-hearer (cf. Grosjean, 1989) has a number of positive consequences. But before highlighting these positive consequences, we should note that they are likely to be in contrast with the negative monolingual ones discussed earlier in this study.

The bilingual/holistic view is anxious to discover how the bilingual succeeds communicatively in his/her everyday life. This necessitates the examination of the bilingual's languages and how they can be used, either separately or together. This view also involves the choice of more appropriate tests designed to meet the domains of language use. Thus clearer identification and control of the speech mode is required before stating testing procedures. Furthermore, this view encourages us to differentiate between different levels of proficiency attained by the bilingual in his/her languages along the continuum of bilingualism. We can conclude here that the consideration of bilingualism as an exceptional phenomenon can be regarded as a positive consequence. The language competence of a bilingual, therefore, should be considered and studied as an integrated whole rather than compared with two corresponding monolinguals.

The description of the bilingual/holistic view of bilingualism and the identification of its positive consequences have been supported by a number of researches carried out to investigate bilingualism neurolinguistically and neuropsychologically. Whitaker, et al (1981:69), for instance, states that:

"Our understanding of the monolingual brain will provide one framework, which may or may not be adequate to account for the multilingual brain".

Given the necessity of obtaining additional information on the bilingual/ multilingual brain, researchers have shown renewed interest in studying the representation of the coexisting languages in a bilingual brain. Indeed, some of these attempts have succeeded in providing evidence which supports the bilingual view of bilingualism. Whitaker (1978) disputed the differential representation of all languages in the bilingual's brain; he argued that this representation is identical to that found in a monolingual brain. The experimental and clinical evidence for the continuing emphasis placed on the already discussed bilingual view usually comes from the assessment of bilingual aphasics. Ojemann et al (1978a:409) therefore recognizes that:

"one way of answering this question would be to observe the language of polyglot aphasics".

In this instance Paradis' work (1987) attempts to answer questions already raised and to make suggestions in the domain of bilingual neurolinguistics.

To conclude this section, we wish to stress the compelling importance of the understanding of the bilingual/holistic view of bilingualism. We will then be ready to investigate the phenomenon of bilingualism from linguistic, sociolinguistic, psycholinguistic, and neurolinguistic perspectives.

2.2.4 Language Lateralization

The subject of the cerebral localization of language and the lateralization of language for monolingual and bilingual speakers has received much attention in the relevant literature, both past and present. Reviewing the literature that discusses the issue of lateralization, we notice that the prominent question which

frequently is asked, is about whether two languages occupy the same brain region. Therefore, this consistent insistency on having a well-founded understanding of language lateralization provides further impetus to investigate whether or not different languages utilize different cerebral regions in bilinguals or whether the neural organization of the bilinguals' linguistic systems differ from that of monolinguals. The research in this field is divided. On the one hand, Scoresby-Jackson (1867), and Ojemann and Whitaker (1978a;1978b) suggest that two (or more) languages occupy different loci within the language hemisphere. On the other hand, Pitres (1895), Pötzl (1925), Minkowski (1928;1963), Ombredane (1951) and Gloning & Gloning (1965) have argued against the proposal of separate anatomical centers specifically assigned for each new language learned by polyglots. Moreover, it has been reported that there is a growing number of contemporary researchers who accept the hypothesis of differential representation of languages and their distinct anatomical localization. They assume on one hand that the two languages may not be subserved by exactly the same neuronal circuits and on the other that the languages are differently lateralized.

In order to account for language lateralization in bilinguals, four main types of study have been involved (Paradis, 1985):

1. Linguistic studies which have recognized the importance of the linguistic structure of two languages in contact. It is noted that Weinreich's work (1953) has lead to a better understanding of this type of studies.

2. Psychological studies which have been devoted to the understanding of the bilingual linguistic memory. They have tried to describe, as in the study of McCormack (1974), two independent or interdependent bilingual linguistic

memories.

3. Neuropsychological studies which have concentrated on the study of differential lateralization of languages in the bilingual brain. Vaid and Genesee's review (1980) gives a good account of the clinical and experimental studies of the neuropsychological bases of language processing in bilinguals.

4. Finally, neurolinguistic studies have steadily been concerned with the investigation of the neurofunctional organization of a bilingual's linguistic systems. In this case, it is necessary to point out that these studies have looked into several different fields, neurology (Ojemann and Whitaker, 1978a); second language acquisition (Whitaker, 1978; Lamendella, 1977); and aphasia (Silverberg and Gordon, 1979; Lambert and Fillenbaum, 1959).

Before launching into a discussion of hypotheses about language lateralization it is necessary to describe the notion of the 'critical period'.

2.2.4.1 The 'Critical Period' Hypothesis

It is accepted that innate systems specific to language do exist. In essence then, there must be some sort of genetic basis in the human general cognitive systems responsible for primary language acquisition (PLA), i.e. first language (L1) acquisition.

The notion of a 'critical period' was first used by ethologists studying the origin of species-specific behaviour. They observed that with certain species (e.g. rats) the development of normal behaviour in the young necessitates the presence of a particular kind of stimulus at given periods. Therefore, the ethologist's understanding of 'critical periods' raised the question of whether there were also critical

periods in human maturation. On the basis of ethological and neurophysiological studies, the existence of the 'critical period' in the case of language acquisition was suggested. The belief in the 'critical period' of language acquisition was argued first by the neurophysiologist Penfield and the psycholinguist Eric Lenneberg. As can be observed in the literature dealing with linguistics, this line of research has on the whole been influenced by the writings of Penfield. In addition, there is further theoretical support from Chomsky, Lenneberg, McNeill and others who reflect the 'nativist' view of first language acquisition. Consequently, the notion of the 'critical period' of language acquisition gained widespread recognition during the fifties and sixties.

Penfield et al (1959), Penfield (1965), and Lenneberg (1967) regard the years before puberty as a biologically active period of language development. In other words, all these studies have tended to show that the development of language to be the result of brain maturation. The cerebral hemispheres were considered to be equipotential at birth and language was thought to become lateralized in the left (dominant) hemisphere. According to the 'critical period' hypothesis, the normal language acquisition process occurs from the age of 2 till puberty, when the brain is fully developed and the cerebral cortex is completely lateralized and functionally specialized. Furthermore, this hypothesis accepts that, due to the gradual decrease of the neural plasticity of the brain with age, the right (non-dominant) hemisphere will fail to take over the language function of the left (dominant) hemisphere after puberty. The argument of the above studies, which support the 'critical period' hypothesis, is therefore based upon evidence from several domains including:

- child aphasics who showed a better prognosis for full recovery of language functions in comparison with adult aphasics;

- the language effects of the removal of one hemisphere which were age-dependent;

- the deficient data from 'wild children' who had been brought up in conditions of inhuman neglect and extreme linguistic isolation;

- the ceasing of the steady slow progress of children with Down's syndrome in their L1 at about the time of puberty; and

- the language effects of sudden deafness which were age-dependent and the potential for language learning which was limited to hearing-impaired adolescents and adults who grew up without any form of language.

In subsequent years, this critical-period hypothesis was called into question because at any given time the cerebral hemispheres are not equipotential for language. In argument with Lenneberg, it is accepted that the cortical lateralization is present in the neonate (if not earlier) and does not develop (Krashen, 1973), nor imply loss of any abilities (Krashen, 1975a; 1981). However, there is agreement about the gradual decrease of the neural plasticity with age as described by Krashen (1975b), who claimed that L2 acquisition differs in important respects from the acquisition of L1.

All the above mentioned theoretical arguments are based upon evidence from different fields. The pathological evidence is mixed. One aspect of the pathological evidence is aphasia recovery in children, i.e. when lesion occurs in the left (dominant) hemisphere. It is thought that recovery is probably helped by the involvement of the right (non-dominant) hemisphere. There are however cases in aphasiology of left (dominant) hemisphere lesion in children which produces severe and long-lasting aphasia.

The field of normal language acquisition provides pieces of evidence which support and at the same time refute the 'critical period' hypothesis. This is true particularly if we consider the aspects of acquisition separately. The assumption that the phonological and grammatical aspects of acquisition continue until around puberty remains contentious. Studies in language acquisition show that most language skills are well acquired before the age of five. Also, further skills (semantics and pragmatics) continue to develop into adolescence and beyond.

Corroborating evidence from the fields of language pathology and acquisition (previously discussed) is provided from neuropsychological studies. Neuropsychological enquiry fails to support the critical-period hypothesis in two ways. It has revealed, on one hand, that language can be lateralized long before puberty and that it may even be as early as the third year; while on the other hand, cerebral anatomical asymmetries are found in infants at birth, along with several functional asymmetries manifested in their dichotic, turning, and grasping preferences.

As soon as we try to learn more about language lateralization, we come face to face with other fundamental hypotheses which underlie the general principles of lateralization. This issue will be explored in the following sections. We will see that there are sometimes different understandings of the acquisition of first and second languages. There is no suggestion however here that one specific hypothetical explanation can possibly provide the right answer to the whole complicated issue with which we are concerned. Therefore, until we have more conclusive evidence from neuropsychological and neurolinguistic studies, the relationship between lateralization and language remains a complex one. The obvious reason, then, for considering language lateralization hypotheses is to try to reach an understanding of the subsequent related linguistic and paralinguistic phenomena.

2.2.4.2 The Hypothesis of Equipotentiality

The hypothesis of equipotentiality stems from a belief in cerebral hemispheric equivalence. It stresses language lateralization as a development from an equipotential state which exists in the first two years of life. Among the many works which provide evidence of the equipotential state in the two cerebral hemispheres is Marie's (1922). He has attributed the similar latent linguistic capacity of the right and left hemispheres to an early assumption that the two halves were mirror images of each other. Marie's (1922:180, quoted in Dennis et al 1977:93) compelling reason for language equipotentiality is thus linked with his personal judgement that:

"The inborn centers which we know (and they are not numerous) are always bilateral and very clearly symmetrical. The motor centers of the limbs, the centers of vision, have their location in each of the two hemispheres in symmetrical regions.... How can we admit the existence of an inborn center for speech which would be neither bilateral nor symmetrical".

Another fruitful line of enquiry was prompted by other researchers like Matsubara, 1960; Geschwind & Levitsk, 1968; LeMay & Culebras, 1972; Witelson & Pallie, 1973; Wada, 1974; and others. This group's studies were preoccupied with the structural left-right asymmetries in the anatomical and vascular features of the language regions not only in adulthood but at birth as well. Furthermore, these studies explicitly demanded an explanation why the left hemisphere was generally the language dominant one rather than the right. Therefore, Marie (1922:181, quoted in Dennis et al 1977:94) gave the following account in anticipation :

"Far from possessing a center of speech at birth, each individual must, by his

own effort, create one; and it is in the left parieto-temporal zone that this occurs. Why? Perhaps simply because the nerve elements of the left hemisphere develop a little before those of the right hemisphere".

Failing to disprove the scientific fact of the anatomic asymmetry of the cerebral hemispheres, some other researchers have proposed other frameworks to be taken into account when interpreting language lateralization. In the light of the studies which have argued for and against anatomic symmetry, researchers have dissociated anatomy and function by admitting anatomic asymmetry and refuting the functional asymmetry in the two hemispheres of the brain. Lenneberg (1971), for example, has accepted the notion that the left and right cerebral hemispheres have latent language capacities of similar nature irrespective of their anatomic asymmetry.

In spite of all these researches on equipotentiality of the cerebral hemispheres, relatively little has yet been shown to form a tenable hypothesis (as will be discussed later in this thesis) because it has not been completely sustained by evidence from language impairment produced by cerebral damage.

2.2.4.3 The Stage Hypothesis

The distinction between the 'right' and 'left' cerebral hemispheres has indicated differences in both their anatomy and function. By and large researchers, under the influence of data from a number of sources, have considered that the right hemisphere may play an important role during the acquisition of first and second languages.

Nevertheless, from the viewpoint of the stage hypothesis, the key issue is that

the involvement of the right hemisphere is great for languages acquired after the first one in right-handed individuals. Many investigators have hypothesized that the participation of the right hemisphere is particularly great at the early stages of second language acquisition. It can, thus, be inferred from the 'stage hypothesis' that the differential lateralization of a bilingual's two languages will decrease with the increase in the level of proficiency in his/her second language. In a thorough and perceptive review of research on language lateralization in bilinguals, we notice that much of the support for the 'stage hypothesis' derives from investigations which have found that the bilinguals' L1 is more left lateralized than their L2 (Sewell & Panou, 1983; Schneiderman & Wesche, 1983; Maitre, 1974; Sussman, Franklin, & Simon, 1982; Gaziel, Obler, Bentin, & Albert, 1977; Silverberg, Bentin, Gaziel, Obler, & Albert, 1979; and others). Taking for granted the assumption that second language proficiency ranges from zero to full bilingual proficiency, it must, however, be mentioned that a few other studies, which are based upon a tachistascopic paradigm (Gaziel et al, 1977; Obler et al, 1975; Silverberg et al, 1979) and a dichotic listening paradigm (Wesche & Schneiderman, 1982) in their investigations, have provided evidence that proficient bilinguals are more left lateralized in their L2 than nonproficient ones.

As its name suggests, the 'stage hypothesis' is a mere hypothesis which has been put forward for the sake of argument. Yet, in spite of the certainties observed by a number of researchers who have examined this hypothesis, the fact remains that there are some studies which oppose the concept of differences in lateralization for first and second languages. In support of this argument, some studies have questioned the efficacy of the 'stage hypothesis' by reporting no distinguishable differences whatsoever in the patterns of lateralization of L1 and L2 in

bilinguals (Barton, Goodglass, & Shai, 1965; Galloway & Scarcella, 1982; Gordon, 1980; Hamers & Lambert, 1977; Rapport, Tan, & Whitaker, 1983; Soares & Grosjean, 1980; Walters & Zatorre, 1978), whereas others have reported bewildering evidence of greater left lateralization for L2 (Carroll, 1978; Rogers, Ten Houten, Kaplan, & Gardiner, 1977). Therefore, alternative explanations have been given for these contradictory results. For example, the authors of these studies (Genesee, et al, 1978; Sussman et al, 1982; Galloway & Krashen, 1980) have seen in these contradictory results evidence that the contextual variables (age, stage, or manner of language acquisition) are highly influential in language lateralization. However a few other studies (Bryden, 1978; Obler, Zatorre, Galoway, & Vaid, 1982; Seglowitz & Orr, 1981; Vaid, 1983) have tried to study the artifacts of the experimental design, such as the choice of the subject and measure of lateralization, as well as the appropriateness of the procedures of testing which account for individual differences. In consequence, the experimental design is regarded as inappropriate because of its inability to predict differences in language lateralization.

In this case, with such a variety of findings and explanations, it seems reasonable also to seek evidence from language handicap sources. Our goal, thus, in the section devoted to language impairment in this thesis will be to obtain sufficient evidence in order to achieve the best possible understanding of the hypothesis concerned.

2.2.4.4 Paradis' Hypotheses of Language Lateralization

Many investigators have come to an agreement that language lateralization in bilinguals is an open issue. Under the impact of this awareness, Paradis (1987) has attempted to explore the controversy of this crucial issue. For a general in-

troduction, Paradis (1987:8-9) has introduced four hypotheses which consider the neuroanatomical and neurophysiological representation of languages:

(i) The Extended System Hypothesis

This hypothesis sees languages as being subserved by the same neurophysiological substrate and processed in the same neuroanatomical structure. The notion of this hypothesis, thus, entails the assumption that the languages of a bilingual are not differentiated in their representation. Accordingly, the language system of a bilingual has bilingual phonemes, morphemes, and syntactic rules appropriate to each individual context. In other words, L1 elements are used in L1 context and L2 elements in L2 context. The point of view represented by this hypothesis is that the languages in a bilingual brain are similar to different registers of stylistic variations in a monolingual brain. Hence one would suggest that the languages of a bilingual are considered to be different ways of encoding a message within the same system. However, this hypothesis places great emphasis on the notion of having one representation of several languages.

(ii) The Dual System Hypothesis

The dual system hypothesis recognizes the existence of 'two' independent linguistic systems in bilinguals. This hypothesis has thus provided us with the further insight that there are 'two' sets of phonemes, morphemes, and syntactic rules stored in the brain of a bilingual. Moreover, it has argued in favour of the notion of having separate linguistic systems in a bilingual subserved by different networks of neural connections.

(iii) The Tripartite System Hypothesis

A shift has taken place from 'The Dual System Hypothesis' as a resource to be

drawn on for the benefit of a better understanding of language lateralization. In the view of 'The Tripartite system Hypothesis' there must be one single underlying neural substrate for languages which share some identical items. Such an understanding implies that each of those non-identical items has its own separate neural representation. In other words, the net outcome of this hypothesis in relation to language representation is that only the marked features of languages are represented separately in the bilingual's brain.

(iv) The Subset Hypothesis

In the light of 'The Subset Hypothesis', language representation in bilinguals has been regarded as the outcome of both 'The Extended System Hypothesis' and 'The Dual System Hypothesis'. This hypothesis has not considered the hypotheses (i) and (ii) to be mutually exclusive. Regardless of the lack of consent concerning hypotheses (i) and (ii), 'The Subset Hypothesis' argues that the languages of a bilingual are stored in identical ways, i.e. in a single cognitive system (langage). Nevertheless because the elements of each language (langue) are restricted to their relevant context, it is thought that there are separate network connections for each language. This interpretation, of course, means that bilinguals have two or more independent subsets of neural connections one for each language within a larger system which manipulates them.

We should ask ourselves to what extent the above mentioned hypotheses are reliable in clarifying to us the issue of language representation in bilinguals. It is therefore useful to remember that we also need to look for clinical evidence in order to prove or disprove them.

Now that we have traced the hypotheses (i); (ii); (iii); (iv), it is not surprising

to find that they may have brought about the investigation of the role of the right hemisphere in language acquisition and learning.

2.2.5 Understanding the Role of the Right Hemisphere

2.2.5.1 The Participation of the Right Hemisphere

In pursuing the views concerning the role of the cerebral right (nondominant) hemisphere, we find that the extreme classic view that it has no form of linguistic capacity has largely grown out of pieces of experimental and clinical evidence. However, the relatively new basic understanding of the role of the right hemisphere has on the whole fulfilled the expectation that it is capable of taking over some language functions if the left (dominant) hemisphere loses its incorporative language characteristic. (Henceforth I will use 'left' and 'right' to cover 'dominant' and 'nondominant' respectively).

The impetus to investigate the role of the right hemisphere, which is strikingly highlighted by the appearance of a number of related hypotheses, can be partly attributed to the fact that the participation of the right hemisphere in language functions has been realized to be indispensable in monolinguals and bilinguals. Accordingly, there seem to be at least four hypotheses summarized by Paradis (1987:4) to clarify the issue concerned:

(i) The Redundant Participation Hypothesis

This hypothesis is based on the idea that both cerebral hemispheres process information in identical ways. Nevertheless, the salient feature which isolates one from the other is the left hemisphere's greater quantitative participation. Therefore, the claim that the participation of the right hemisphere is minimal/non-existent,

implies that its removal will have few aftereffects on language.

(ii) The Quantitatively Complementary Participation Hypothesis

This hypothesis claims also as (i) that the same language stimuli are processed in the same way by each cerebral hemisphere but with greater participation on the part of the left hemisphere. It lays further emphasis on the importance of the whole (left and right hemispheres) for normal language processing. So, a lesion to the corresponding parts of either hemisphere will probably cause identical language deficits proportional to its degree of severity.

(iii) The Qualitative Parallel Participation Hypothesis

In contrast to the hypotheses in (i) and (ii), this hypothesis argues that each hemisphere processes the same stimulus in qualitatively different ways. In essence then, each hemisphere includes its own inherent mode of functioning to process the corresponding aspects of a language stimulus. Interestingly, such an idea of the right hemisphere's qualitative complementarity to the left hemisphere would question the hypothesis in 2.2.4.2, which has taken for granted the functional equipotentiality of both hemispheres.

(iv) The Qualitatively Selective Participation Hypothesis

The interaction between the inherent mode of functioning of each cerebral hemisphere and language stimulus processing is quite different in 'The Qualitatively Selective Participation Hypothesis' from what has been discussed in (ii). In the attempt to understand the role of the right hemisphere, this hypothesis claims that each hemisphere specializes in processing different aspects of a complex language stimulus. This indicates that the functional complementarity between the left and right hemispheres is with respect to the whole utterance, whereas in 'The Quali-

tative Parallel Participation Hypothesis' (iii), it is with respect to each aspect of an utterance.

In concluding this part, it is interesting to reflect what the hypotheses have hitherto attempted to do in order to facilitate the understanding of the role of the right hemisphere :

"the redundant and the qualitatively complementary participation hypotheses assume an identical processing of the same aspects of an utterance; the qualitatively parallel participation hypothesis assumes a different processing of the same aspects; while the qualitatively selective participation hypothesis assumes a different processing of different aspects."
(Paradis, 1987:4)

In considering the role of the right hemisphere we must move on to consider its involvement in language acquisition. Hence, in the following part we will discuss the right hemisphere's possible relevance in the acquisition of L1 and acquisition/learning of L2.

2.2.5.2 Right Hemisphere Involvement in First Language Acquisition

The current state of knowledge among neurologists and linguists is that the right hemisphere plays a crucial role in the early stages of L1 acquisition. This view has on the whole been the outcome of two separate lines of argumentation.

The first line of argumentation maintains that language lateralization is less in children than in adults. It is pointed out by Schneiderman et al (1983) and Schneiderman (1986) that Witelson (1977) has interpreted the first line of argumentation as greater participation of the right hemisphere in language processing in children

than in adults. The studies of the second line of argumentation, however, have observed that language lateralization shows no developmental change in children (Segalowitz, 1979, 1983). What is important in the result of these studies is that it is not in conflict with Witleson's argument, which emphasizes the participation of the right hemisphere in L1 acquisition. However, an insightful analysis of these studies can possibly reveal to us that an alternative framework has been applied to investigate this type of hemispheric participation. Therefore, in the view of the second line of argumentation, there is more difference in the kind than in the degree of lateralization between infants and adults. Furthermore, this view is supported by an assumption that a baby's responses, unlike an adult's, are more governed by inborn reflexive asymmetries. Without regarding this assumption as controversial, Segalowitz (1979, 1983) has attributed the decrease of left lateralization with age to the fact that adults are free to have their two cerebral hemispheres engaged in language stimuli processing.

In this connection, it is worth mentioning that Segalowitz's (1979, 1983) 'difference in kind' proposal is claimed to be further supported by Levy's (1985). The neurophysiological picture presented by Levy (1985) reflects the fact that efficiency in the collaboration between the two cerebral hemispheres is increasing due to the process of mylenization of the fibres of the corpus callosum in early childhood. As a result there will be an increase in the speed of transmission with age throughout early childhood. This increase in the speed of transmission will in turn improve the ability of children at that early stage of childhood to have greater access to both hemispheres than neonates. In principle, as Schneiderman (1986:235) has put it, Levy's and Segalowitz's proposals :

"lend support to the position that the right hemisphere plays a definite and

important role in first language acquisition, rather than an accidental one resulting from incomplete hemispheric specialization".

2.2.5.3 Right Hemisphere Involvement in L2 Acquisition/Learning[3]

The distinction between left-and-right hemisphere participation in polyglots, which is made by the 'lateralization' model, has been recognized by Albert and Obler (1978). It is, however, interesting to note Solin's (1989) observation that Albert and Obler (1978) have also recognized that the right hemisphere is preferentially recruited during non-primary language acquisition. In the attempt to understand the 'how' of the right hemisphere's involvement in language processing, a number of studies have been introduced to account for it. Although some of the studies (e.g. Schneiderman's, 1986) have presented strong supporting arguments, the evidence is not absolutely in favour of the right hemisphere's participation in L2 acquisition/learning.

In most of the studies and discussions on the role of the right hemisphere in L2 acquisition/learning, it is the stage hypothesis which is assumed to have presented one of the most important arguments for the understanding of its involvement. Furthermore, the correlated assumptions of a number of studies (i.e. the studies which maintain that there is a distinction between conscious language learning and unconscious language acquisition, and that both first-and second-language acquirers/learners go through similar early stages in organizing novel language stimuli have hitherto contributed in particular to the understanding of the right hemisphere's role in L2 acquisition/learning.

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[3] We regard the use of the terms 'acquisition/learning' and 'acquirer/learner' of theoretical significance. They are associated with Krashen's (1978, 1981) notion of 'language acquisition' in opposition to 'language learning'. See on this distinction (1.2) and (3.2).

However, there is a general awareness that both heuristic (holistic) and algorithmic (analytic) procedures are independently involved in analyzing language stimuli. It thus appears that the presumed dissociation between algorithmic and heuristic procedures is probably related to the speaker's knowledge and use of language. To our knowledge, this model of language encoding and decoding is thought to be determined by the anatomical and functional asymmetries of the cerebral hemispheres. From this point of view, the concept of differential language procedures linked with each cerebral hemisphere seems to be influential in understanding language processing neurolinguistuically.

The results of the enquiry about the procedures linked with each cerebral hemisphere in language processing, first of all, have shown that the left hemisphere is privileged so that it is the most efficient in the analytical-sequential (algorithmic) mode of language functioning. Secondly, on the question of whether the right hemisphere is ever privileged, they have shown that the right hemisphere is ideally suited for a holistic-parallel (heuristic) mode of language functioning. Nevertheless, the cerebral hemisphere's two modes of functioning can possibly provide us with further indications. On the one hand, it suggests that Chomsky's (1965) notion of the linguistic competence and the concept of linguistic creativity will probably not coincide with the role of the right hemisphere. On the other hand, it reveals that the right hemisphere's role in language acquisition generally and second language acquisition/learning particularly is not subsidiary to the left hemisphere's role but:

"Rather, it may play a crucial, but essentially nonlinguistic part in developing such a competence".

(Schneiderman, 1986:238)

As already mentioned, from the view points of language acquisition and pedagogy, first-and-second language acquirers/learners show similarity in their early stages of language acquisition/learning. On the whole, it has been agreed that the early stages reveal the succession of firstly decoding the target language stimuli into perceptual patterns, and secondly translating these perceptual patterns into speech production. That is to say there is an initial 'active listening period' for adults before starting the phase of speaking the second language (Krashen, 1981; Neufeld & Schneiderman, 1980; Nord, 1980). The notion of 'active listening period' is thus parallel to the natural strategy usually utilized by child acquirers (Dulay, Burt, & Krashen, 1982). In many investigators' view, these findings could easily account for the universal observation that acquirer'/learners' comprehension precedes and exceeds their production ability. A similar picture emerges from an examination of the early expressions uttered by language acquirers/learners (Fillmore, 1979; Krashen & Scarcella, 1978; Peters, 1977; Vihman, 1982). However, it must be emphasized here that many investigators have agreed that first-and second-language acquirers/learners produce formulaic expressions (unsegmented routines and patterns) in the early stages of language acquisition/learning as being stated by Fillmore (1979:212):

"The strategy of acquiring formulaic speech is central to the learning language: indeed it is this step that puts the learner in a position to perform the analysis which is necessary for language learning...".

At the level of neurolinguistics, the algorithmic and heuristic processes in language acquisition/learning have also been described. What emerges from this type of research is that early acquirers/learners rely upon the heuristic strategy of the right hemisphere to process the new data in the target language. An important

consideration, which is pointed out by Peters (1977), is that the use of 'chunking' strategies may influence the extent of the right hemisphere's participation. Nevertheless, since a language cannot be mastered in a single stride, linguistic processing is required for these chunks of data in the human brain. It is assumed that such a process will be carried out by the left hemisphere in its characteristic analytical-sequential mode.

In experimental research it is not sufficient to accept these labels of algorithmic and heuristic processes in language acquisition at their face value. It is in this respect that several investigations have contributed to the interpretation of the role of the right and left hemispheres in language acquisition/ learning. In the last few years, a few studies have begun to focus more closely on this role; they have thus provided a sobering check on the claims concerned. In considering the role of the right hemisphere in the early perception of novel transcripts by literate adults and preliterate children, a set of experiments (for example, Bakkar, 1981; Gordon & Carmon, 1976; Silverberg, Gordon, Pollock, & Benin, 1980) has shown that the subjects display right hemisphere advantage or left visual field in response to these stimuli. Moreover, the same set of studies has revealed that familiar transcripts correspond to the right visual field or yield left hemisphere advantage. Hence the results of these studies indicate that the right hemisphere in its holistic-parallel characteristic mode is responsible for handling novel transcripts and phonetic strings. Yet familiar transcripts and phonetic strings appear to be processed by the analytic-parallel characteristic mode of the left hemisphere.

Another set of experiments has been undertaken to examine the hemispheric specialization for speech perception acoustically. Once more we find here support for the hypotheses advanced, namely the hemispheric specialization and the

right hemisphere's role in language acquisition/learning. The studies of Levy & Trevarthen (1977) and Studdert-Kennedy & Shankweiler (1970) result in a supportive assumption of the notion that the right hemisphere is ideally suited for holistic-parallel mode of language functioning. These studies have shown the right hemisphere's inability to execute auditory analysis. This assumption will probably lend support to the view that the right hemisphere is capable of carrying out only gross analyses of language stimuli. Through these findings, it becomes clear that the left hemisphere is responsible for complex linguistic tasks.

The semantic role of the right hemisphere is to be investigated in association with pragmatics. How to relate semantics and pragmatics to each other is an important issue in the fields of language studies. The right hemisphere's initial employment of 'heuristic' strategies, which relys upon pragmatic knowledge, is crucial in determining referential meaning. In other words, for the establishment of real world reference, the participation of linguistic and pragmatic knowledge is indispensable. This type of correlation between linguistic and pragmatic knowledge has attracted widespread attention in relation to the right hemisphere's role of language processing.

Several investigators have begun to pursue the importance of pragmatics in language acquisition/learning (for example, Neisser, 1967,1969; Tarone, 1974; de Villiers & de Villiers, 1973; Brown, 1973; Dulay et al, 1982). In one of the enquiries, Tarone (1974:231) found that at the early stages of speech perception acquirers/learners do not depend on syntactic rules in decoding language stimuli but rather on the:

" ... *context of situation, such as facial expression, suprasegmental features,*

and various "props" from the physical setting".

Tarone's suggestion is thus that meaning extraction involves the participation of the right hemisphere's pragmatic, contextual, and emotive abilities. It should be added though that other studies in language acquisition/learning have also been supportive of Tarone's suggestion. Accordingly, language data from language acquirers/learners can possibly reveal the great extent to which they rely upon content words in their language production at the early stages. At this point it is interesting to know that the works of Brown (1973) and Dulay et al (1982) appear to give further evidence for the importance of pragmatics. They have introduced in their works the notion that there is a distinction between 'major' and 'minor' lexical items at the language outset. Major lexical items correspond to the so-called 'content' or 'lexical' words, and minor lexical items to 'function' or 'grammatical' words. Adopting the distinction between these two types of lexical items, they have stated that the acquirers'/learners' language production lacks minor lexical items in the early stages such as inflections and prepositions. Nevertheless, they believe that the minor lexical items (grammatical functors) will be added gradually and systematically. What is important for the understanding of different types of lexical items and their use is the inference that language acquisition/learning undoubtedly fulfils expressive functions because of the social needs. The results of these studies have been further supported by the results of de Villiers & de Villiers' study (1973) on first language acquisition. De Villiers & de Villiers (1973) have given instances which highlight the fact that young children at early stages depend primarily upon contextual cues rather than syntactic ones in order to comprehend their first language stimuli. The general inference of all these studies is no longer in doubt; the right hemisphere maintains a great and important role in analyz-

ing language stimuli pragmatically. Putting it differently, the right hemisphere maintains the communicative role in language acquisition/learning.

The findings in 2.2.5.3 prompt further speculation on the roles of both hemispheres after the language has been acquired/learned. In most of the studies on this issue, it is tacitly assumed that once a language is acquired/learned, the left hemisphere will take over the functions of the right one. In order to prove the idea of the left hemisphere's capabilities in performing all core language-related functions at 'the final stage', we find that many investigators have relied upon evidence from language handicap (as we will see later in this thesis).

With due caution we can assume that both strategies (algorithmic and heuristic) are needed in varying measures depending on factors related to the acquirers/learners directly or indirectly.

2.2.6 Factors Influencing The Participation of the Right Hemisphere

We will now turn to the factors under which the alleged greater participation of the right hemisphere occur. However, there has been a general awareness that the same factors can probably explain the assumption of differential involvement of the cerebral hemispheres in language processing and consequently the differential application of strategies (either algorithmic or heuristic). However, these factors have been singled out by Paradis (1987:5-7) as hypotheses:

2.2.6.1 The Age Hypothesis

The discussion on the role of age in the participation of the right hemisphere has been largely confined to the features that characterize language acquisition/learning at different maturity levels. As a consequence, there has been a proposi-

tion that any language learned after the critical period (optimal age/puberty) is less lateralized.

2.2.6.2 The Stage Hypothesis

The widespread notion in the field of language acquisition/learning is that second language learning ranges from zero to native-like proficiency. Therefore, hemisphere-related preferences are accounted for by the level of language proficiency. In other words, it is thought that L2 becomes increasingly left-lateralized as the command of that particular language improves.

2.2.6.3 The Revised Stage Hypothesis

The apparent difference between 'The Stage Hypothesis' and 'The Revised Stage Hypothesis' is the idea of recency of language acquisition/learning. Recency of acquisition/learning is thus a factor which accounts for the right hemisphere's participation in language processing during language acquisition/ learning. In other words, the right hemisphere's participation increases: first at the early stages of L1 acquisition and secondly at the early stages of L2 acquisition in a natural environment and not through formal learning methods.

2.2.6.4 The Type of Bilingualism Hypothesis

The importance of the distinction between 'coordinate' and 'compound' bilingualism is reflected in the study of language lateralization. Since the 'coordinate' bilingual keeps his/her languages quite separate, it is suggested that the right hemisphere will be more involved than for a 'compound' bilingual, who thinks only in one of his/her languages. This implies that a 'compound' bilingual will depend substantially on the same neurological component in using his/her languages.

2.2.6.5 The Context Hypothesis

The social context of language acquisition/learning is likely to exercise a powerful influence on language acquisition/learning. It is therefore necessary to take note of such contextual factors in analyzing the roles of the cerebral hemispheres in language processing. It has been discovered that there is a greater participation of the right hemisphere in language acquisition context rather than in language learning context.

2.2.6.6 The Modality Hypothesis

A useful result of the many recent studies on L2 learning is the proposal of 'modalities' of L2 learning by several researchers. The proposed models (reading, writing, and listening comprehension) can illuminate to an extent the right hemisphere's participation in language processing. It is found that L2 learning through reading and writing leads to a greater participation of the left hemisphere. By contrast, language acquisition in general and L2 acquisition in particular through listening indicates greater participation of the right hemisphere.

2.2.6.7 The Language Specific Hypothesis

Another line of enquiry has drawn attention to the importance of language characteristics. It has been noted that different characteristics of a given language are likely to be processed by either of the cerebral hemispheres. It follows from this hypothesis that the appositional and propositional modes of thought engage the cerebral hemispheres differentially. The right hemisphere is thought to engage more in an appositional than in a propositional mode of thought. Rogers et al (1977) hypothesized that one would expect greater right hemisphere participation with

languages which create involvement with the perceptual fields (e.g. Hopi) rather than with languages which orient their users away from the immediate context (e.g. English). Rogers et al (1977) have examined this hypothesis by monitoring EEG alpha wave activity of Hopi-English bilingual school children listening to taped folk tales in each language at a given time. The results of this experiment have shown on the one hand a greater left hemisphere alpha wave suppression in both languages, while on the other hand, the right hemisphere alpha wave suppression is greater for Hopi than for English. We can infer here that the right hemisphere participates more in processing languages like the Hopi which elicits a greater appositional mode of thought. The evidence pertaining to the issue of language-specific features, thus, supports the hypothesis of differential engagement of the cerebral hemispheres with different modes of thoughts. Furthermore, it has been agreed that the role of the right hemisphere increases with ideographical increases in ideographical languages. However, the involvement of the cerebral hemispheres in processing vowels and tones is also variable; vowels and tones of different languages will probably be processed in different hemispheres. For example, vowels and pure tones in Japanese are processed in the left and right hemispheres respectively and only in the left hemisphere of speakers of Indo-European languages. Moreover, there is some evidence that the directionality of scripts, which demonstrate different patterns of visual fields, is influential in allowing the participation of one hemisphere rather than the other (for example, the Semitic languages which read right to left).

2.2.6.8 The Structural Distance Hypothesis

Another group of studies has been preoccupied with the idea of different linguistic structures of languages. These studies have claimed that structurally different

languages are differentially lateralized in the brain of a bilingual (e.g. Hebrew and French). In their attempt to investigate the role of the right hemisphere in the light of this assumption, they draw attention to greater participation of the right hemisphere with structurally different rather than structurally close languages (e.g. Arabic and Hebrew).

In conclusion, there is one striking indication in the above general review of the hypotheses of language lateralization and cerebral hemispheric roles that language mechanisms of the left and right hemispheres participate in processing first and second languages. However, the next step is to turn to the study of language handicap as an essential contribution to the understanding of language lateralization particularly in bilinguals.

2.2.7 Impaired Language and Language Lateralization in Bilinguals

The study of the relations between language handicap and language representation has developed rapidly. It is well-known that the understanding of language representation in monolinguals and bilinguals comes from medical reports on language disturbances of patients who had suffered some type of brain damage. Perhaps the most compelling fact is that the number of reports seems to point to greater potential contribution of aphasiology. By focusing on the common basis implicit in the earlier thinking on the impaired language, we find that it was directed to the problem of memory disorders (Ribot, 1881) and aphasia in polyglots (Pitres, 1895). Nevertheless, this emphasis in the nineteenth century on the neurolinguistic perspective in connection with bilingualism influenced to a limited extent some of the linguistic theories. As a generalization one can say that language handicap today is a main component in helping to understand the complex

processes of language lateralization in bilinguals. In other words, it is increasingly recognized now that our understanding of the phenomenon of bilingualism has benefited from the insights brought to it by investigations of language handicap generally and bilingual aphasia particularly.

2.2.7.1 Hemispheric Equipotentiality and Language Handicap

In spite of the classic evidence of the cerebral hemispheric equipotentiality which has been discussed in 2.2.4.2, clinical evidence has argued strongly against it. In the light of this argument, it is possible to assert the anatomical and functional asymmetries of the cerebral hemispheres.

The early forms of the hypothesis of equipotentiality started around 1860s. Cotard (1868), for example, found that the infantile hemiplegics, even with a complete atrophy of the left hemisphere, did not show any signs of aphasia in their language use. In pursuing the implications of the hypothesis of equipotentiality, a considerable number of enquirers have checked its validity. Dennis et al (1977) have questioned the hypothesis concerned by highlighting the gaps related to the understanding of the cerebral hemispheric functions. As with any other infant research, Dennis et al (1977) found that Cotard (1868) considered the adult aphasic signs as bases to assess the language output of infantile hemiplegics. It is, therefore, essential to have an adequate reassessment of the language output of infantile hemiplegics. In a wider sense, it is taken for granted that equipotentiality implies equivalence of language skills of both hemispheres. Hence the intention here is to demonstrate whether or not the cerebral hemispheres are similarly responsible for disordered language.

The results of most of the nineteenth- and twentieth- century studies have

shown on the one hand that language impairment is apparently associated with the left rather than the right hemisphere. On the other, the same studies have given a special impetus to the re-examination of the notions related to language representation. In other words, a few investigators have tried to study much more directly the latent functional differences of the cerebral hemispheres. For example, in a study undertaken by Lenneberg (1969) he hypothesized that hemispheric equipotentiality holds until the onset of speech (after 2 as it is claimed). Age is thus one of the factors responsible for the functional asymmetry of both cerebral hemispheres. Annett (1973) in her study discussed both the equipotentiality hypothesis, which is strongly supported by Basser's study (1962), and Lenneberg's modified version of it. What Annett's study has succeeded in doing is to demonstrate that the cerebral hemispheres are not functionally identical even before the development of speech. In fact, the data of Annett's study (1973) suggest that language impairment can emerge from right and left infantile hemiplegia even before 13 months of age. Annett saw in the results of her investigation evidence that left-hemisphere insult causes significantly more language handicap (No=50, language impairment in 32.0%) than right-hemisphere insult (No=41, language impairment in 10.1%).

However, the evidence from Annett's study (1973) is not absolutely conclusive because it has not given an answer to an earlier query regarding the existence of any kind of correlation between the side of the cerebral injury and the kind of language impairment. It is, however, worth relying on earlier investigations undertaken to examine this issue (for example, Bishop, 1967; Hood & Perlstein, 1955). The practical value of Bishop's (1967) and Hood & Perlstein's (1955) studies lies in their being able to provide us with some evidence on the kind of language im-

pairment issue. The results of Bishop's study (1967) emphasize that either of the perinatal cerebral hemispheres suffer language impairment. In attempting to link the lateralized cerebral insult with the kind of language impairment, Bishop (1967) has drawn several conclusions. It has been found that infantile hemiplegics suffer dysarthic[4] conditions irrespective of the side of the cerebral hemispheric damage (52.9% of left infantile hemiplegics and 53.8% of right infantile hemiplegics). Turning to the other conclusions, we find that not only Bishop's (1967) data but also Hood & Perlstein's (1955) suggest that infantile left hemiplegics undergo delayed language acquisition particularly in the syntactic aspect, whereas infantile right hemiplegics undergo delayed acquisition of word combinations. In subsequent years, this neurological understanding of different language skills developed in the cerebral hemispheres has been re-enforced by similar evidence from Dennis & Kohen (1975) and Dennis & Whitaker (1976). Both groups have argued in favour of the functional asymmetry of the cerebral hemispheres. The explanation advanced for this conclusion by the former group has been from the data of hemidecorticates who possess and process the left hemisphere. The group concerned has succeeded in proving the inferiority of the syntactic comprehension of the right hemisphere in comparison with the left one. But the results of the study of the latter group (the language development study of 3 children 9-10 years old who showed soon after birth Sturge-Weber-Dimitri syndrome[5] and children who underwent complete hemispherectomy prior to 4.6 month of age but their IQ scores at the time of this

[4] Dysarthria: primary motor disturbance of the articulary muscles which directly impairs speech production. The dysarthic patient may slur individual sounds, or omit sounds, and may share difficulty in the production of contextual utterances (Eisenson, 1973).

[5] Sturge-Weber- Dimitri Syndrome: Port wine naevus on upper part of the scalp and other vascular abnormalities both intracranially and in the other parts of the body (Firkin & Whitworth, 1987:513). Vascular changes are usually associated with intracranial califications, mental retardation, epileptic seizures , crossed hemiparesis, hydrophthalmia, and hemianopsia (Jaklonski, 1969:296).

study were identical with those of normal children of this age) has on the one hand documented the syntactic inferiority of the right hemisphere. In other words, corroborating evidence for the greater emphasis on the functional asymmetry of the cerebral hemispheres per se has been offered by data showing no parallelism in the language limitations of right and left hemidecorticate infantile hemiplegics. On the other hand, it has managed to highlight a few semantic differences but most strikingly the ways in which the syntactic capacity of the right hemisphere is inferior; so that the syntactic adult rate of proficiency is lower, and the age of the acquisition of syntax is higher. Moreover, Dennis & Whitaker (1976) have found another piece of evidence for the claim of the left hemisphere's syntactic superiority. The data of their study provides us with clear evidence that the right hemisphere is incapable of comprehending the meanings of passive statements. What emerges from these studies, whose purpose is to examine the notion that the language functions of the decorticated insulted cerebral tissue are subserved by the intact cerebral hemisphere, is that :

"The lack of adultlike linguistic impairments in hemidecorticate infantile hemiplegics is not evidence for hemispheric equipotentiality unless it can also be shown that early left- hemisphere damage has no detrimental effects on language acquisition".
(Dennis et al 1977:97)

Therefore :

"Hemispheric equipotentiality does appear to make an untenable supposition about the brain because it neither explains nor predicts at least two facts about language—that the two perinatal hemispheres are not equally at risk for language

delay or disorder and they are not equivalent substrates for language acquisition". (Dennis & Whitaker, 1977:103)

Although we have known from clinical data that there is cerebral hemispheric asymmetry, important lacunae in our understanding of language representation and the roles of cerebral hemispheres in language acquisition/learning can be compensated for by evidence from aphasiology.

2.2.7.2 Aphasiology and Hemispheric Capabilities

Turning to the functional asymmetry of the cerebral hemispheres, it is necessary to state the functional labels of the cerebral hemispheres. In this connection, we have to remember that the equipotentiality hypothesis has proved invalid as mentioned in 2.2.7.1. We also notice, from what has been said earlier in 2.2.5.2 and 2.2.5.3, that the well-known labels which are used to describe the functions of the right and left hemispheres are 'holistic-parallel' and 'analytic-sequential' respectively. However, what emerges from research in the field of hemispheric capabilities is a conviction that each of the cerebral hemispheres plays a crucial role in language acquisition/learning.

The aphasiological evidence has also demonstrated the unequipotentiality of the cerebral hemispheres. Working on the assumption that a greater proportion of the right-sided rather than the left-sided lesion result in non-parallel recovery in aphasics, it is possible to infer that there is a hemispheric functional asymmetry irrespective of the proportions of hemispheric lesion. Therefore, the study of Critchley (1962) is particularly illuminating because it shows that aphasics who suffer right hemisphere lesion undergo difficulty in learning novel linguistic materials. It seems plausible to suggest that Critchley's study (1962) indicates that

the left hemisphere is most efficient in processing linguistic stimuli. However, it is important to mention here that the efficiency of the left hemisphere relies on the speaker's knowledge of the linguistic system. Other scholars have looked for more and more evidence from aphasiology to prove the holistic-parallel mode of functioning of the right hemisphere. That is to say they find aphasiology a rich testing ground for language-related hypotheses. Foldi et al (1983) and Gardner et al (1983), for example, have pointed out that the aphasic patients of their studies, who suffer left hemisphere lesion, have employed contextual and paralinguistic cues in order to infer the communicative intention of the speech. In other words, right hemispheric strategies have been used to achieve communication.

2.2.8 Summary

In spite of all the research on language lateralization and representation, these issues are still not clear-cut. It is thus seldom possible to predict the distinct types of bilingualism from the clinical evidence of bilingual aphasics. Nevertheless:

"Our understanding of bilingualism would be greatly improved if data were systematically collected about the cause of aphasia in bilingual patients."
(Lambert and Fillenbaum, 1959:29)

Yet, we are very much indebted to the clinical literature in general and aphasiology in particular for their assistance in helping us to understand the phenomenon of bilingualism from a neurolinguistic perspective. In other words, the contributional aspect of language handicap to our understanding of bilingualism lies in providing us with concrete examples of language lateralization, language representation, and cerebral hemispheric capabilities.

2.3 The Theory of Interlanguage

2.3.1 Introduction

We cannot describe a theory without coming face to face with the types of theories which have a bearing on our understanding of it. In our treatment of this topic, we shall first consider the types of theories generally as studies in their own right and then look more specifically at their relations to the theory of 'Interlanguage'. Disregarding details, it is generally assumed that theories can be classified on form and content bases. The above distinction, namely 'form' and 'content', corresponds to the difference between 'deductive' and 'inductive' approaches in classifying theories (McLaughlin, 1987). Besides, what is important in making this type of distinction is that it helps in visualizing the concept of 'theory'.

According to the deductive approach, a theory involves a number of concepts interrelated in a form of propositions which have been taken to be true without being tested. In the deductive approach these propositions constitute the axioms or assumptions of the theory itself. However, the deducing procedure, which relies upon the laws of logic, is usually applied to the theory in order to obtain new propositions. These new consequent propositions are called hypotheses and they can become the laws and facts of the theory if they are empirically supported (McLaughlin, 1987). Our understanding of the types of theories is further represented by pyramids. McLaughlin (1987:8), for example, points out that deductive theories contain fewer and more general laws at the top of the pyramid and an increased number of more specific laws as one moves towards the base. He believes that deductive theories are more 'top-down' because they have the tendency to provide us with more general casual statements. Therefore, it appears that deduc-

tive theories have the advantage of offering interesting claims but at the same time have the disadvantage of being remote from empirical data in consequence of their logical deductions.

In contrast to the deductive approach, the inductive approach believes that a theory is developed from the accumulation of a number of related facts and laws. Unlike the relationship between the deductive approach and the propositions, the inductive approach lays its main emphasis on propositions which have been empirically tested. In other words, it depends on facts and laws but not on axioms that are assumed to be true. This is to say that the inductive approach is empirically and not logically based. In McLaughlin's framework, (1987:9), the inductive theory is identified as a 'bottom-up' theory because it is more cautious and descriptive in explaining any phenomenon than the deductive one. In the light of this description of the inductive approach, we can envisage the advantage and disadvantage of the inductive theory, as McLaughlin did. He has attributed its advantage to the fact that this type of theory is close to data. He has linked its disadvantage with the notion that such theories are limited in their account of phenomena which are usually revealed after repeated observations of the same pattern of behaviour.

In a review of research on second-language learning, we recognize that theories have been used variably to meet either their deductive or inductive ends. In other words, theories of second-language learning can be placed along a continuum which highlights their degree of 'deductivity' and 'inductivity'. An example would be Krashen's Monitor Model theory. In McLaughlin's view (1987:19), Krashen's theory can be placed on the deductive side of the inductive-deductive continuum. Without going into details, McLaughlin believes that Krashen's theory, which has been developed over a number of years, adopted the 'top-down' approach. Putting

it differently, the theory starts from a number of assumptions trying to provide us with a comprehensive picture of second-language learning. At the other extreme, there exist other second-language learning inductive theories. It is interesting to find that their concentration is on a part rather than on the whole picture of second-language learning. Therefore, inductive theories usually describe restricted ranges of data. With this framework, the theory of 'interlanguage' can be related to the inductive type, as we are going to see in our study of the 'Interlanguage' theory in the following sections.

2.3.2 Background Information on 'Interlanguage' Theory

Among the many interesting characteristics of research on second-language learning in the seventies is the generation of challenging scientific concepts, models, and predictions. The success of such attempts can be seen in the emergence of various linguistic theories, for instance, the 'Interlanguage' theory, 'Krashen's Monitor' theory, 'Linguistic Universal' theory, the 'Acculturation/Pidginization' theory and so on so forth. Our goal in this chapter will be to obtain a sufficient background and an overview on the theory of 'Interlanguage' because its study has both a theoretical and a pedagogical value.

Since about 1970, the language variety which second-language learners develop has been examined as a language system with its own characteristics and rules. Such studies are usually identified as studies of 'learner-languages' or 'interlanguage' studies. The term 'interlanguage', which was coined by Selinker (1969,1972), first meant the interim grammars constructed by second-language learners on their way to the target language:

"... *the existence of a separate linguistic system based on the observable output*

which results from a learner's attempted production of a TL norm. This linguistic system we will call 'interlanguage' (IL)."
(Selinker, 1972:214)

In spite of all the terms used by different researchers to refer to the same phenomenon, such as 'approximative system' (Nemser, 1971), 'transitional competence' (Corder, 1967), and 'idiosyncratic dialects' (Corder, 1971), the term 'interlanguage' won favour over the other terms. It should be noted that 'interlanguage' has been characterized as a major approach to second-language research since the early seventies. Generally speaking, the above terms can be referred to as the 'learner languages' which foreshadow, on one hand, the learner's system at a specific point in time, and on the other hand, the linked systems as indicators of the learner's development over time.

The theory of 'Interlanguage' was placed in opposition to the 'Behaviourist' theory which prevailed till the late sixties. In the main, the 'Behaviourist' theory argued that language learning is an acquisition of the habits of the new language. It held that most of the predicted errors, by means of contrastive analysis, were attributed to interference from mother tongue habits in the target language. Behaviourism as well as contrastive analysis was seriously affected by the radical changes in linguistic theory during the Chomskyan era. For instance, the emergence of the notion of competence and the concept of linguistic creativity together with Chomsky's attack on behaviourism (1959, 1966) has led language investigators to re-examine the theoretical bases of some linguistic findings. In short, the shift has been towards accounting for second-language learning in intralingual rather than crosslingual terms. Therefore, in the progress of the scholars' interest in the theory of 'Interlanguage', the focus has been transferred from the considera-

tion of interlanguage as distinct from the learner's first and target languages to the notion which says that language learners use various internal strategies to process the input and control their output. Selinker (1972), for example, has considered that the application of these strategies by language learners is inevitable, and getting acquainted with them will possibly help our understanding of 'interlanguage' as a linguistic phenomenon.

2.3.2.1 Interlanguage and Strategies of Learning

Attempts have been made by a few investigators to find out what strategies learners use to cope with the difficulties that are presented by second-language learning. The term 'learning strategy' is employed here to mean the overall characteristics of the approach applied by the learners. In other words, our concern is with the general tendencies adopted by second-language learners. Various investigators have produced different inventories of second-language learning strategies, but our interest is in Selinker's (1972). Selinker's investigation has become a major focus of interest in recent years and it has further influenced the understanding of the phenomenon of 'interlanguage'. Selinker (1972) argued that 'interlanguage' was the result of five central cognitive processes in addition to some minor ones. He assumed that these cognitive processes exist in the latent psychological structure of the human brain which is activated after puberty whenever an individual attempts to learn a second language. The point here is not that we are looking for some patent answers to each of them. It is much more a question of understanding them as inherent processes in second-language learning. Selinker's (1972:215–217) proposed cognitive processes are:

(a) *Language Transfer:*

Some items, rules, and subsystems which occur in IL performance are a result of transfer from the first language.

(b) *Transfer of Training:*

Some items, rules, and subsystems are a result of the training process used for the second language.

(c) *Strategies of Second-Language Learning:*

Some elements of IL performance may result from the learner's specific approach to the material to be learned.

(d) *Strategies of Second-Language Communication:*

Some elements of the interlanguage may result from specific approaches to second-language learners to communication with native speakers of the TL.

(e) *Overgeneralization of TL Linguistic Material:*

Some of the interlanguage elements are the product of a clear overgeneralization of TL rules and semantic features.

It should be added though that Selinker (1972) saw the development of the interlanguage as different from the first-language development because of fossilization in the second language. Accordingly:

"Fossilizable linguistic phenomena are linguistic items, rules, and subsystems which speakers of a particular NL will tend to keep in their IL relative to a particular TL, no matter what the age of the learner or amount of explanation and instruction he receives in the TL".

(Selinker, 1972:215)

What is important for the interpretation of fossilization is Selinker's early notion that it occurs especially because of language transfer– for instance, French speakers who retain the uvular /R/ in their English interlanguage or English speakers who retain the English word order in their German interlanguage. Coulter (1968, quoted in Selinker 1972) proposed that we should not assume that fossilization is the result of the process of language transfer only. It may also be the result of other internal language processes suggested by Selinker. For example, it is likely that the second-language communication strategies tell the learners that they know enough of the TL to communicate. In subsequent years, Selinker and Lamendella (1978) argued the causes of fossilization by giving a neurological explanation. They claimed that the neural structure of the human brain, as a result of age, restricts the operation of the hypothesis-testing mechanisms.

In the model of second-language learning research, outlined in the above sections, interlanguage was suggested to be adult second-language performance. Nevertheless, the 'Interlanguage' theory was extended to cover child second-language performance as well. In fact, Selinker et al (1975) presented data demonstrating the inadequacy of an earlier assumption by Selinker (1972) regarding the activation of the latent psychological structure after puberty. If we now focus on the research of Selinker and his associates (1975), we find that they manifested two circumstances where IL hypothesis can be extended to child-language acquisition: (1) non-simultaneous acquisition of the second language; (2) the absence of native speaking peers of the TL. The data of Selinker's study is from 7-year-old children in a French immersion programme in an English language elementary school in Toronto, Canada. The children were 10 boys and 10 girls who fulfilled the above conditions of (1) and (2). The results of this investigation revealed, first of all, a

definite systematicity in the interlanguages of the children. Secondly, as for the question of whether systematicity highlighted any learning strategies, the results were positive. We must add here that what is meant by 'strategy' is a conscious or unconscious cognitive activity to process second-language data in the attempt to express meaning. Selinker et al (1975) interpreted systematicity as being predictable by learning strategies but not by grammatical rules. Accordingly, the learning strategies inferred from their data are; language transfer, overgeneralization of TL rules, and simplification. Within this framework, the conclusions which Selinker and his associates drew from the consistent use of these strategies was that the children's IL was systematic with regard to the conditions (1) and (2).

2.3.2.2 Interlanguage as Rule-governed Behaviour

It is not surprising to find attempts have been made to look at the systematicity of the interlanguage of second-language learners as being rule- governed behaviour. The central fact in support of the above understanding of interlanguage is that it can be idealized linguistically like any natural languages. In the attempt to understand the parallelism between ILs and natural languages, Adjemian (1976:300) thus drew our attention to two parallels:

"...both are the same type of systems and hence are both amenable to description by linguistic-theoretical tools...(and) ILs normally can be used for communication among their speakers".

Broadly speaking, we can visualize the communicative function of ILs as a characteristic shared with natural languages. From all these considerations we thus conclude that mutual intelligibility can be treated as an inherent characteristic of ILs. With this framework, Adjemian (1976:300) claimed that mutual intelligibility

is not only among IL speakers but also among IL speakers and speakers of the TL norm. Working on this assumption, Adjemian saw that, in contrast to Selinker's cognitive emphasis, what emerged from interlanguage research was a conviction that interlanguage grammars, like any language system, were internally consistent in obeying universal linguistic constraints. Putting it differently, the property of consistency of ILs is illustrated by the discovery in them of organized sets of rules and basic elements (lexical items, phonological units, grammatical categories, etc.).

Adjemian's (1976) and Corder's (1973) suggestion regarding the study of interlanguage harmonize in one main respect. Both recognized that research can be directed at the learner's 'transitional competence'. Corder (1973) originally thought that the only possible methodological difference between Error Analysis and the study of the learner's language lies in what is actually being compared. According to this point of view, Error Analysis is intended to compare the learner's language with the 'whole' target language, while the study of the learner's language itself is directed at the learner's knowledge at a given point in time in connection with what has been taught so far. As can be seen from the above explanation:

"The first, then, is a prospective comparison and the other a retrospective comparison."
(Corder, 1973:37)

In Adjemian's view (1976), therefore, a language researcher is expected to be able to infer the psychological mechanisms at play once knowledge about the transitional competence is obtained. With this conception of the systematicity of the interlanguage, then, Corder and Adjemian argued that a large body of elicited data, which contains regularities, is required to determine whether or not the rules

data, which contains regularities, is required to determine whether or not the rules of the learner's IL are active.

As we saw in section (2.3.2), Selinker pointed out that interlanguage has structurally an intermediate nature between the first and the target language, whereas a few other researchers focused on the notion of permeability of ILs:

"The L2 learner's interlanguage system is permeable, in the sense that rules that constitute the learner's knowledge at any one stage are not fixed, but are open to amendment."
(Ellis, 1985b:50)

However, Adjemian (1976) emphasized that the property of permeability of ILs allows penetration or generalization. In this view, the IL systems are penetrated (invaded) by rules or forms of the first language, or rules/forms of the target language are overgeneralized in an attempt to communicate. Furthermore, Ellis argued that permeability is a general feature of natural languages; it is the degree of permeability which differentiates interlanguage from other language systems. Ellis (1985b:50) made this point clear by comparing the evolution of the standard negative construction of Chaucer's English ('not' after the main verb) with its modern form over several centuries. From this it should be clear that the loss of permeability will prevent the learners from achieving native-like competence. In contrast to Ellis' notion of the permeability of natural languages, Adjemian (1976:311) viewed permeability as:

"... a property unique to ILs and by which they may be differentiated from all other natural languages ".

2.3.2.3 Interlanguage as a Continuum of Styles

The other approach that emerged was to recognize the interlanguage as a set of styles that are dependent on the context of use. For example, in a detailed and systematic way, Tarone (1979; 1983; 1985; 1988) questioned the validity of the notion of systematicity in interlanguage. In other words, she wanted to see the notion of interlanguage reinterpreted. Tarone (1983) claimed that linguistic context and the task used for the elicitation of data from learners have a variable effect on the language learner's output. Under the concept of interlanguage as a natural language, Tarone (1979) assumed that IL behaves essentially like other languages. Influenced by Labov's (1969) classic work on 'Observer's Paradox', Tarone (1979) made it clear that Labov's axioms should be applied to any applied linguistic research. In her analysis of the research literature, Tarone noticed that in spite of the fact that second-language researchers are aware of the variability of IL, they seem to disregard this characteristic in establishing and reporting experimental procedures. Tarone (1979, 1983) pointed out that Labov's five major axioms of Observer's Paradox characterize the development of 'interlanguage' study. Her paradigm of work, thus, is founded on the presupposition that these axioms are applicable to researches on interlanguage. However, for a fuller appreciation of the relationship between the study of 'interlanguage' and Labov's methodological axioms, we think it is wise to mention them as summarized by Tarone (1979):

Axiom One: Style-Shifting. There are no single-style speakers. Every speaker shifts linguistic and phonetic variables as the social situation and topic change.

Axiom Two: Attention. It is possible to range the styles of a speaker along a continuous dimension defined by the amount of attention paid to speech.

Axiom Three: Vernacular. In the 'vernacular' style, where the minimum amount of attention is given to speech, the most regular and systematic phonological and grammatical patterns are evidenced. Other styles tend to show more variability.

Axiom Four: Formality. When a speaker is systematically observed, a formal context is thereby defined, and the speaker pays more than the minimum amount of attention to speech.

Axiom Five: Good Data. The best way to obtain enough good data on any one speaker is through an individual tape-recorded interview: a formal context.

It is interesting to observe that Tarone, who strongly recommended Labov's methodological axioms, has pointed out the value of interlanguage not only to research but is also constantly aware of its chameleon-like nature and its extreme sensitivity to context.

Turning to the assumption that interlanguage varies systematically with context and elicitation task, it is necessary to state Tarone's notion of 'Capability Continuum' of interlanguage speech production. On the question of the learner's interlanguage Capability, Tarone (1983) described it as having the function of underlying or guiding the second-language learner's regular language behaviour. One should add here that Tarone advocated a greater emphasis on the term 'capability'; it is used instead of the term 'competence' because 'capability' would lead to accurate descriptions of interlanguage. In other words, 'capability' can fulfil all the expectations of a clear understanding of what underlies all regular language behaviour, whereas 'competence' refers to the linguistic knowledge which is reflected in grammatical intuitions accessed through introspection. In making the distinction between 'capability' and 'competence', it is assumed that introspection cannot

fully reveal the IL capability of second-language learners. What is important in this context is that this distinction also highlights the distinction between Adjemian's paradigm (2.3.2.2) and Tarone's paradigm (2.3.3.3) for the study of interlanguage. The former paradigm, whose grammar is composed of rules, first maintains the Chomskyan notion of homogeneous competence. Secondly, it attributes variability to the inherent permeability characteristic of the homogeneous competence, while the grammar of the latter paradigm is assumed to be composed of regularities. This, of course, does not mean that the learner's IL capability in this paradigm is homogeneous (single-style), but rather heterogeneous (multi-style). Therefore, in Tarone's model (1983:152) of 'Interlanguage Continuum' (Figure 2.3),

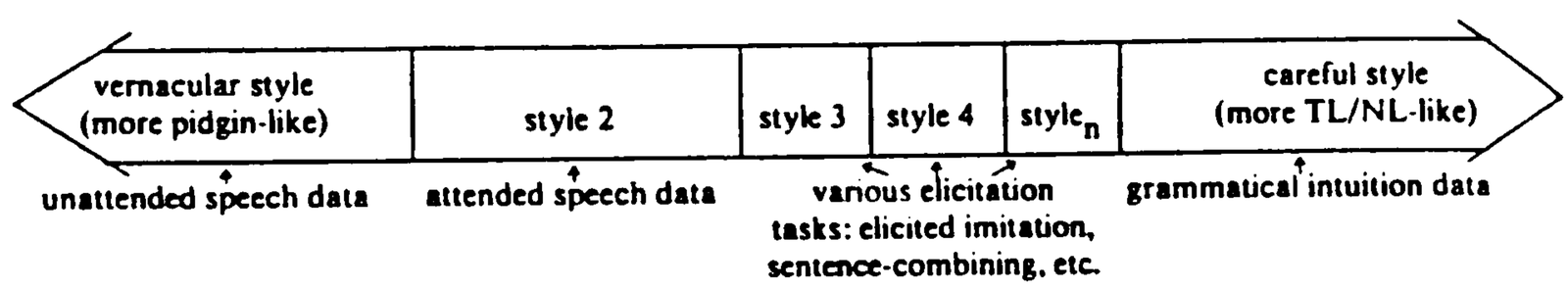


Figure 2.3: Interlanguage Continuum

we notice that:

"The capability of the speaker of IL includes both the careful and the vernacular styles of the system, and the intermediate continuum of styles which makes up the system of IL. The regularities evidenced in each style in the continuum may be described and modelled, and these models may be systematically related to one another in our final complete description of IL capability continuum."

In the light of this understanding of the 'Capability Continuum', we can expect

that TL structures, which move from the careful style towards the vernacular over time as a part of the acquisitional process, will replace the spontaneous IL structures of the vernacular style.

It is important to point out here that Tarone, like Adjemian, suggested not only that the IL but also the styles of IL obey the constraints of language universals. In essence then, interlanguage is considered a natural language, and as such it is subject to analysis by means of standard linguistic techniques. For example, Gundel and Tarone (1983), in their study of pronominal anaphora in the interlanguages of second-language learners, found that they violated neither the Pragmatic Condition on Anaphora, nor the Structural Condition on Coreference. But in her analysis of the uniqueness of ILs, Tarone (1983:156) did not claim that, 'fossilization', 'backsliding', and 'permeability' are unique characteristics of ILs. Nevertheless, she drew attention to the fact that they occur in dialect conflict situations within the same language, and that some of these characteristics occur in first language acquisition. At this point it shall be pointed out that Tarone had added the sociolinguistic point of view to Adjemian's linguistic perspective of interlanguage. It seems to Tarone that interlanguage is not a single system and must be studied, like any natural language, in its social context starting from the assumption that speech varies in different social circumstances.

To sum up, the three views of interlanguage discussed in section 2.3.2 (1) Interlanguage and Strategies of Learning, (2) Interlanguage as Rule-governed Behaviour, and (3) Interlanguage as a Continuum of Styles, agreed that second-language learners possess intermediate grammars or, more generally, a set of rules. In pursuing these formulations, we must remind ourselves that Selinker and Adjemian emphasized that the first language is influential on the emerging interlan-

guage. The main distinction between these two authors, however, is seen in the fact that Selinker hypothesized that ILs result from different cognitive processes rather than native languages. As such ILs are not natural languages, though they are likely to evolve into natural languages. On the other hand, although Adjemian and Tarone viewed ILs as natural languages, Tarone differed from Adjemian in emphasising the notion of variability of interlanguage as determined by context of use.

2.3.3 The Development of the Theory of Interlanguage

In the literature on interlanguage we find references to the development of the theory of interlanguage. It can be pointed out that the attempts to account for the phenomenon of interlanguage have moved from description to process-orientation.

2.3.3.1 Descriptive Account of Interlanguage

The picture presented of the interlanguage notion in the early 1970s reflects in large part a reaction to the prevalent views of second-language learning. Basically, the interlanguage notion challenged the behaviourist learning theory and contrastive analysis by laying weight on the internal language-specific processes rather than on the external factors in language development. This is why several investigators insisted on the fact that second-language learning is quite different from the traditional understanding of it. According to the reactionists, language learning is not a matter of building up new habits with interferences from old ones, but is a matter of internal cognitive processes. A consequence of the newly emerged language learning theory is the lack of interest in interference as a major role played in second-language learning. In other words, it has been widely acknowledged that second-language learning must be studied directly and not simply by comparing the

learner's output to his/her first language. Specifically, contrastive analysis would not be acceptable to language learning investigators today because it both over-predicts and underpredicts the difficulties of second-language learners. Therefore, McLaughlin (1984), who studied this problem, rejected the idea that 'Contrastive Analysis' is methodologically a reliable approach on the basis that learners with different backgrounds seemed to go through the same developmental stages in their learning of L2. Nevertheless, it is worth noting that these conclusions derived from two trends of research, namely morpheme studies and error analysis.

The principal influence that has shaped the Natural Order Hypothesis is Roger Brown's research (1973) with children learning English as a first language. In Brown's terms, there is a common 'invariant' sequence of acquisition for at least 14 functors: articles, auxiliaries, noun and verb inflections, copulas and prepositions. It should be added though that the works of Dulay and Burt (1973, 1974b), who studied the grammatical morphemes or 'functors' of five-to eight-year-old children learning English as a second language, have been particularly influential. Both these studies have shown how similar is the developmental sequence of second-language learners regardless of their first language. However, Dulay and Burt's cross-sectional research (1973), using the Bilingual Syntax Measure to elicit speech samples of 151 Spanish-speaking children from different parts of the United States, showed that the pattern of the use of the functors in obligatory contexts was similar to but slightly different from Brown's observed pattern in monolingual children.

Besides this, attempts have been made by a few investigators to find out whether adult second-language learners follow the same pattern in the use of functors as that found in children. The results of the enquiries of Bailey et al (1974) and Larsen-Freeman (1975), for example, demonstrated harmony between the adults'

and children's patterns in the use of functors regardless of their first language and the types of task applied to elicit data. Hence, the results of these investigations were interpreted as follows:

> *"we acquire the rules of language in predictable order, some rules tending to come early and others late. The order does not appear to be determined solely by formal simplicity and there is evidence that it is independent of the order in which rules are taught in language classes."*
> *(Krashen, 1985:1)*

Yet, the morpheme studies were called into question because there was evidence that the findings were instrument-specific. Porter (1977) made a strong case in favour of the above assumption. He tried to study much more directly the effect of the Bilingual Syntax Measure on the acquisitional order of monolingual English-speaking children. Unexpectedly, the data of Porter's study showed that the acquisitional order of morphemes did not resemble the order found by Brown (1973) in first-language learners of English, but it resembled the order found by Dulay and Burt (1974b) in second-language learners of English. This enquiry made it possible to claim that the findings of the morpheme studies, which mostly used the Bilingual Syntax Measure, are likely to be the artifacts of the use of this instrument. But even here the evidence was not absolutely conclusive and corroborative evidence was offered from other investigations. In many of these investigations, the researchers closely studied the findings of the morpheme studies. McLaughlin (1987), for example, laid particular stress on a distinction between cross-sectional and longitudinal studies. Another aspect of McLaughlin's view on the findings of the morpheme studies was that they are not related to 'acquisition sequence', but rather to 'accuracy of use'. From the point of view of McLaughlin the mor-

pheme studies were cross-sectional in nature, focusing on the percentage of the correct occurrence of morphemes in obligatory contexts. On the other hand, several longitudinal studies, such as Hakuta's 1976; Huebner's 1979; and Rosansky's 1976, ascertained that the acquisition sequence did not correlate with the orders of accuracy of use found in cross-sectional research.

The second research trend, namely error analysis, also comprises a descriptive account of interlanguage. Error analysis, as a technique of studying the patterns of difficulty in second-language learning, was widely adopted in the seventies to obtain an accurate account of interlanguages which failed to be achieved by contrastive analysis (for example, Richards 1974; Corder 1981). What emerged from Dulay and Burt's research (1972, 1974a) is a conviction that the majority of the children's errors highlight the impact of the target language rather than the child's first language. According to Dulay and Burt (1972), who relied on data from Spanish-speaking children learning English, the majority of the errors were developmental. In other words, most of the errors corresponded to the errors of monolingual children acquiring English. In the same study, however, they further argued that the errors which showed the influence of the child's first language revealed overgeneralizations which correspond to strategies employed by monolinguals to acquire their first language. Subsequently, Dulay and Burt (1974a) sought more comprehensive conclusions regarding the notion of developmental sequence or natural order in children's language output. They investigated the speech samples of children learning English as a second language with different native languages (Spanish, Chinese, Japanese, and Norwegian). Nevertheless, the results of this study were not conflicting. Equally, there were striking similarities between the types of errors the children made. Furthermore, research on adults learning English as a second

language (for example, George 1972) ascertained the predominancy of developmental errors over interference errors. Secondly, harmony was found between the developmental errors of adult subjects and those made by children acquiring the target language.

In discussing the results of 'morpheme' studies and the studies of 'error analysis', we are inevitably inclined to think that second-language learning is like first-language acquisition. In other words, both language acquisition and learning involve universal linguistic operations. Similarly, as we did with the 'morpheme' studies, we need to consider the challenging views concerning 'error analysis' studies.

It is important not to underestimate what has been achieved by other investigators in the same research paradigm of second-language acquisition. A vast amount of carefully attested data acts as evidence of the weaknesses of error analysis research. Schachter and Celce-Murica (1977) questioned the ability of error analysis to predict precisely the error types a second-language learner makes and/or why the learner makes them. Accordingly, the same error instances can be frequently cited as being due to intralingual as well as interlingual factors. In another study (Andersen 1978), the data suggested that the influence of intralingual and interlingual factors was not always propositional; some errors reflected the interaction of both factors.

Working on the assumption that an error is an appropriate unit of analysis, Hakuta and Cancino (1977) drew attention to the fact that the scale of predominancy of developmental errors over transfer errors could hardly be objective. They hypothesized that the distinction between the nature of developmental errors,

omission of high frequency morphemes (e.g. the verb 'to be' and noun and verb inflections) and transfer errors, changes of large constituents (e.g. changes in word order), could indicate non-equivalent opportunity of occurrence of these two types of errors. In exploring this area we find that Schachter's (1974) early study is quite supportive of the above notion. Schachter recognized that the aspect of avoidance is closely associated with the general study of errors. However, Schachter's study (1974) states that second-language learners simply avoid certain linguistic structures in which they anticipate making errors. It is therefore necessary to take note of such a tendency because it is likely to reflect structural differences between the learners' L1 and the TL.

Like the 'morpheme' studies, error analysis is typically based on cross-sectional research and is not without its problems. In general, cross-sectional research has been extensively used to illustrate general issues of language learning. This in many ways surprising, because it can be argued that the findings of error analysis research, based on cross-sectional samples, contrast with research findings based on longitudinal samples. It should however be pointed out that there are some enquiries into whether specific errors are common at specific points in time or whether some last longer than others. For example, Taylor (1975), in an attempt to study longitudinally adult language learning strategies, reported that interlingual errors appeared primarily at the early stages of development. Moreover, Wode (1981), who relied also on data gathered longitudinally, found very clear associations between the second-language learner's interlingual errors and the particular problems learners face.

2.3.3.2 Process-oriented Account of Interlanguage

What is important for the interpretation of a process-oriented account is that it is a reaction to the 'product' orientation account of interlanguage discussed in (2.3.3.1). It should be added though that the validity of process orientation became more salient with the development of the theory of Interlanguage. Briefly, this type of investigation invited interlanguage researchers to find answers to major issues facing interlanguage theory. The major issues identified by McLaughlin (1987) are how systematic and variable the interlanguage is, how interlanguages are acquired, and what is the role of L1.

(i) Systematicity and Variability of Interlanguage

The foregoing account of the phenomenon of interlanguage has shown different views of the dynamic and changeable nature of interlanguage. While the early studies of interlanguage are based on interpretations of several product sources, it is Adjemian who specifically put forward the notion of instability of the interlanguage systems. It is however worth remembering that morpheme studies and error analysis gave brief attention to the variability and change of interlanguage. Side by side with morpheme studies and error analysis, a few attempts have been made to account for the systematicity as well as variability in the interlanguage development.

In considering variability in interlanguage, there are of course developments within the same direction. There are thus new approaches to the study of variability. Some of these approaches have contributed to the shift away from the preoccupation with variability and systematicity as two separate components in the study of interlanguage, by focusing on variation within systematicity. This

approach has pointed to important features of individual variability within uniformity. The investigations of Andersen (1978) and Hyltenstam (1977) have introduced an element of empirical enquiry into this trend. In their examination of individual variability within uniformity, they applied DeCamp's (1971) 'implicational scales'. However the advantage of employing this procedure which is often used in sociolinguistic research, is that the implicational scales feature the presence and absence of attributes in the speech of a speaker or a group of speakers. At the same time, it offers a useful map to derive a 'coefficient of reproducibility' which was first applied by Guttman (1944). Accordingly, high and low coefficients indicate a high degree of systematicity and no systematicity in the data successively. In Andersen's (1978) and Hyltenstam's (1977) work, the subjects displayed systematicity in their second-language acquisition regardless of their first-language backgrounds. In other words, in spite of the fact that the language output in both studies evidenced individual variation, there was a single implicational order. For example, Hyltenstam's 160 adult subjects learning Swedish followed a specific order in the acquisition of Swedish syntax of negation— first negatives after auxiliary forms and then after main verbs.

Another group of studies was preoccupied with the functional variability in the development of interlanguage. The studies of Huebner (1979, 1983) on the acquisition of the English article by a Hmong speaker constitute attempts at examining not simply linguistic forms, but recognizing the functional processes involved in the use of these forms. On the other hand, his research was particularly illuminating because he confined himself to the longitudinal analysis of language acquisition. For example, Huebner (1979) closely examined the use of /da/ (for English the), using a corpus of 17 one-hour taped-recorded sessions over a period of one year.

On the basis of this examination, Huebner on the one hand found that there was little systematicity in the use of /da/, while on the other, he maintained that the system of articles in the speech of a Hmong speaker is functionally developed. Accordingly, there are several stages demonstrating different uses of the article. At the first stage, /da/ was used to indicate specific and known nouns. There followed a stage in which /da/ was used in all noun phrase environments. The final stage at the end of the year, the usage of /da/ became closer to its usage in standard English—it was not used in noun phrases where the information was not known to the hearer. Huebner further suggested that variability in interlanguage could be attributed to the learner's changing hypotheses about the TL. The learner's interlanguage was therefore seen to be systematic beneath its superficial variability. Huebner (1979) identified a shift in the interlanguage of his subject from a topic-prominent system (Hmong-like) to a subject-prominent system (English-like) within the period of one year which was closely associated with the use of /da/. On the other hand, these topics were not marked with /da/ at the early stages of the acquisition of articles as it was the case at the late stage.

A number of researchers for their part began to interpret the variability of interlanguage as being systematic. This revolution in interpreting variability led to the recognition of the systematicity and internal consistency of interlanguages as well as the possibility of finding in them alternate rules for performing the same functions. Thus, it meant that variability is noticeable in the overall course of interlanguage development. Tarone, seeking perhaps a more comprehensive approach to understanding interlanguage, included in her studies (for example, 1983) evidence that interlanguages are systematically variable like any other natural languages. Tarone's contention was that there is a systematic relationship, as we have

seen in (2.3.2.3), between variability and 'capability continuum'. In other words, the learner's competence can be seen as a continuum ranging from careful to vernacular styles. Each style on the 'capability continuum', in turn, reflects subtly the influence of the social factors and the personal style of the language learner. It was in this climate of thought on interlanguage that Tarone began to argue for the systematic variability of interlanguage, specifically because interlanguage first reveals internal consistency, and secondly, it can be accounted for by a set of variable and categorical rules.

Nevertheless, a further study found non-systematic variability in addition to systematic variability in learners' interlanguages. Ellis (1985a) who has been strongly aware of the occurrence of systematic and non-systematic variability in the interlanguage, based his argument on Huebner's view on language acquisition. Huebner (1981), who investigated the use of two formulas in the speech of a Thai learner of English, noticed that the acquisition of the forms preceded the acquisition of their functions. Extending the above understanding of language acquisition, he explained the acquisition of function as being an evolutionary process. In other words, learners gradually narrow down the functional range of the forms in order to serve the exact functions in the target language. As a consequence of this complex process, two or more forms are often used in free variation before the learner's form-function system becomes final. It is easy, now, to see how Ellis (1985a) found non-systematic variability in the interlanguage. For the purpose of this analysis Ellis gave the example of two negative forms (no + verb and don't + verb) used by a learner in identical situational, linguistic, and discourse contexts in order to achieve the same illocutionary meaning. Accordingly, the extent of non-systematic variation in the developmental sequence of second language acquisition is associ-

ated with the learner's developing ability to distinguish between the situational, linguistic, and discourse use of the forms. However, this understanding of systematic and non-systematic variation of interlanguage has led to the conclusion that:

"It is fluid, malleable, sporadic, permeable, amorphous, pervasive, and dynamic."

(Rutherford 1984:137)

Therefore, in Ellis's analysis the instability of the learner's interlanguage is inevitable in the process of second-language acquisition.

(ii) Interlanguage Acquisition

It is evident that this process-orientated study of interlanguage has been useful for our understanding of its development. Interlanguage researchers have been seeking to understand form-function relationships rather than looking at the phenomenon of interlanguage from a 'universal linguistic' perspective of second-language acquisition. Ellis in (i), for instance, offers some evidence for the assumption that language learners begin with forms before functions. Nevertheless, it is interesting to note that in the development of this process-orientated study of interlanguage another view has stated that functions precede forms. In pursuing the implications of this view, we must present the findings as pieces of evidence for giving language acquisition a functional direction.

Some other language acquisition investigators have derived a different conclusion from the functional approach to the study of the interlanguage from the one we have first described. They see in second-language data proofs of function acquisition occurring without the acquisition of form. However, it can be pointed

out that this view has been reinforced by a number of further researches. For example, Dittmar (1981), who worked with guestworkers in Europe, discovered that temporality was expressed not by means of verb morphology but rather by means of temporal adverbs with infinitive verbs to refer to past or future time. However, another study has identified different devices applied by second-language learners to express temporality. Sato's (1984) longitudinal study of two Vietnamese speakers acquiring English offers a helpful analysis needed to interpret the functional approach. In her analysis of the conversational units of the interlanguage data, Sato discovered that the learners had made use of implicit inferences and context in order to express temporality:

- He unfair (=He was unfair)
- She walk across (=She walked across).

In general, then, the data indicate that past tense morphological markers did not occur in the speech of the learners. But we must be aware of the wide use of communicative techniques to express temporality. The principal question here is whether we should abandon form-to-function analyses because of the claim above that they are unnecessary for our understanding of the process of second-language acquisition. It is argued by Long and Sato (1984) that we need to include both form-to-function as well as function-to-form analyses in our study of the process of second-language acquisition. According to this criterion, we cannot fail to recognize how form are mapped onto functions and vice versa. In fact, it can be said with some justification that the functional approach helps to explain how second-language learners manage, from the early stages of learning, to express in the target language functions they already use in their native language (e.g. temporality, modality, etc.) with limited syntactic and lexical devices.

An illustration of the need to attend to both form and content in the process of language acquisition is offered by Huebner (1983). In Huebner's analysis of the English interlanguage features of his Hmong learner, he found that /isa/ (a form derived from Standard English) was initially used as a discourse marker to indicate topic-comment boundaries:

- What I do everyday isa water the plants.

In other words, the initial use of /isa/ highlights on one hand the learner's success to execute a specific discourse function, and on the other the learner's failure to give /isa/ a copulative verb function. It is important to point out here that the development of the learner's use of the form /isa/ to meet its copulative function has appeared at later stages in various syntactic structures. However, one of the crucial contributions of interlanguage research to discourse functions consists of the investigations which have tended to look at the 'collaborative discourse' as having an important role in the process of language acquisition. In these investigations, researchers did not look at the utterances of the learners as utterances of particular grammatical forms. Therefore, in this way they gained information about how linguistic functions were discourse marked in conversations. We need again to refer to Sato's (1984) research on temporality, which is presented above, because she pointed out that the learners' interlanguages did not contain morphological markers, but rather temporal 'anchor points', established either by their conversational partners or themselves:

- Native Speaker: 'What did you do yesterday?'

- Learner: 'Yesterday, I play ball.'

In this connection, it is worth noting that researchers recently have become

more and more interested in conversations as essential for language acquisition (e.g. Hatch 1978; Long and Sato 1984). The result of such researches is the theory that syntactic constructions develop out of conversations. In Hatch's view, for example, language learners first learn the interactive aspect of a language and they then develop the syntactic one. Hence the conclusion was reached that the establishment of vertical constructions (i.e. conversations) by learners is considered as a medium of establishing horizontal constructions (i.e. syntax). No doubt this mastery of the forms of a language is also a characteristic of first language proficiency. We can hypothesize that second- language learners, like first-language acquirers, master the language by filling in grammatical slots. According to Hatch (1978), in the course of the learning process, which is through language interaction, learners first acquire vertical and then horizontal constructions.

(iii) The Role of L1

What emerges from interlanguage research operating at the product level is that interlanguage in many instances does not yield clear-cut information about transfer and non-transfer errors. In many investigations, researchers (e.g. Hakuta and Cancino 1977; Meisel 1983) attributed the occurrence of transfer and non-transfer errors in the speech of second-language learners to serious methodological problems. On the basis of such studies, the occurrence of a form in both the learner's first language and in the interlanguage does not necessarily indicate the use of the process of transfer. However before reviewing the other direction that research on transfer has taken, namely process-orientated study of transfer, we want to emphasize that the product- orientation has largely proven inadequate.

In attempting to examine transfer as a process, Keller-Cohen (1979) has come to the conclusion that it is possible to find different processes of second- language

acquisition according to the learners' first languages, although the end result is the same. Keller-Cohen reported that a Japanese, a Finnish, and a German child showed roughly the same developmental sequence in the acquisition of the English interrogative. On the other hand, the structural differences between the Finnish language and the English language were seen as a principal cause of the slow acquisition of yes/no questions by the Finnish child. Thus, the processes usually differ because of the structural differences of L1. Further evidence came from an enquiry about the acquisition of the English article in two case studies by Zobl (1982). In his studies of a Chinese- speaking child and a Spanish-speaking child, Zobl referred to different acquisitional ways followed by the children learning the English article. Much of the evidence, on one hand, showed instances of the Chinese child using the deictic determiner /this/ close to the English language usage at the early stages of learning, despite the fact that Chinese does not have the formal category of articles. On the other hand, the deictic determiner was not used by the Spanish child despite the fact that Spanish does have articles. However, it should be added though that another difference in the developmental process, due to first-language interference, has been revealed by Schumann (1982). He has suggested that certain forms of the target language are more likely to take longer to be acquired by speakers of some languages whose first-languages do not contain similar forms. Schumann, for example, has drawn the conclusion that it is harder to eliminate 'no + verb' forms from the interlanguage of Spanish-speaking learners than from the interlanguage of other learners, because of its existence in Spanish.

Besides the notion that transfer can influence the learners' developmental sequences differently in their course of mastering the target language, other phenom-

ena have been suggested by Gass (1984:117–121) that can have a direct bearing on transfer:

(a) Regarding transfer of typological organization, Wode (1981) and Zobl (1979) introduced the notion that transfer would not occur unless there are structural similarities between the first language and the target language. Accordingly, this syntactic congruity will help the forms of the first language to appear in the interlanguage.

(b) Regarding the phenomenon of avoidance, in Schachter's (1974) examination of how Japanese, Chinese, Persian, and Arabic students acquired relative clauses in English, fewer relative clauses were produced by the Japanese and Chinese students than were by the Persian and Arabic students. This phenomenon was thought to be related to the distinction between Persian and Arabic as right-branching languages and Japanese and Chinese as non-right-branching languages. The speakers of the latter only showed difficulties in English relative constructions because of their linguistic background. Schachter's interpretation, however, is that the difficulty in using the English relative constructions is not manifested in errors, but in the avoidance of the use of these constructions.

(c) Another phenomenon looked at through transfer was overproduction of certain elements. By placing the over-produced target-language forms by Japanese and Chinese students in the center, such as 'It is fortunate that...' and 'There is a...', Schachter and Rutherford (1979) tried to attribute such overproductions to the fact that both Japanese and Chinese share the characteristic of being topic-prominent languages. This is thus the characteristic of the first-language

discourse which was retained through second-language forms.

(d) Other investigations laid emphasis on transfer as language learning facilitative. For example, Ard and Homburg's study (1983) on vocabulary development recognized the importance of the phenomenon of language facilitation for its direct and specific effect on the process of learning. It was discovered that Spanish learners of English, unlike Arabic learners of English, did well on vocabulary items which show overt similarity in form and meaning between English and Spanish items. In other words, some of the examples from this study effectively indicate that there is such facilitation for Spanish learners but not for Arabic learners. Nevertheless, Spanish learners did well also on items which showed no signs of similarity both in form and meaning.

(e) Lastly, regarding the phenomenon of modification of hypotheses, Schachter (1983) pointed out that the learner's prior linguistic knowledge is very likely to constrain the possible formation of hypotheses about the target language. In short, the effect of transfer is not necessarily direct on language learners; rather strategy in language learning may be shaped more indirectly by interference. However, it cannot automatically be assumed that the formation of new hypotheses, based upon previous knowledge, is always a landmark in the gaining of accurate and complete information about the target language.

It should be noted that the impetus given by the above attempts to give transfer a process-oriented definition has gradually led to very insightful interpretations of the concept of transfer. These interpretations have opened up exciting possibilities of a more profound analysis of transfer which could prove to be very helpful to our understanding of second-language learning, and consequently to second-language

teaching. Kellerman (1979, 1983), for example, has made us aware of the cognitive process implicit in transfer. He has made direct claims in support of his own notion stating that the learner's decisions are based, first, on his/her awareness of the similarities between the structures of the first and second languages. Secondly, they are based on his/her perception of the degree of markedness of the first-language structure. The learner's actual knowledge of the L1 and the TL will, in turn, formulate his/her perception of L1-TL distance. Together with Kellerman's study, the studies by Gass (1979), Jordens (1977), and Rutherford (1982) have offered a few hints that the predicted occurrence of transfer is in harmony with the learner's perception of the degree of similarity between the two languages as well as the markedness degree of the structures involved. The emphasis of the above studies is laid on the concept of 'markedness' since it is believed to be crucial for our understanding of the transfer notion. The conclusion that Kellerman drew from his study is summarized in this statement:

"Marked forms will be potentially less transferable than unmarked ones...If the 'markedness' level is too high, transfer will be blocked (characteristically language-specific terms)"
(1979: 53–54).

The picture presented here of transfer can be illuminated by two pairs of examples in Kellerman's study (1979)— borrowed from Miller's study (1969) of Dutch learners of English— where he applied the concept of markedness to the domain of semantics:

1.a. break a cup

1.b. break a promise

2.a. kick the ball

2.b. kick the bucket.

Basically, this study has laid emphasis on second-language learners' preferences for particular meanings of words. It recognizes that (1.a.) is more acceptable than (1.b.) because it shows the core meaning of 'break'. As for the second pair, (2.b.) is viewed as unacceptable for being a language-specific term.

With the development of the notion of transfer, and particularly with the growth of interest in studying it process-orientatedly, several studies have reflected a renewal of interest in contrastive analysis. In spite of this rising interest in contrastive studies, researchers have not openly questioned, for instance, Dulay and Burt's simplistic interpretations of contrastive analysis. Yet, a considerable number of enquiries into transfer (Kellerman, 1983; Rutherford, 1982; Zobl, 1983, 1984) seem to suggest that the traditional interpretation of contrastive analysis is premature. As such, the wide gap that has developed between language research and contrastive analysis has been minimized by acknowledging its validity as a methodological device.

2.3.4 Summary

We have in the present section made an attempt to trace how the Interlanguage theory has developed. The net effect of the different approaches to the explanation of the theory of 'Interlanguage', which has been sketched in this chapter, is that it is now no longer conceptualized in terms of single undifferentiated analytical prescription. The various efforts described above suggest a more differentiated and more empirically sustained view of the theory of 'Interlanguage'.

Moreover, Interlanguage theory makes it possible to analyse second-language acquisition comprehensively and also to relate it to other basic concepts. It enables

us to look at the linguistic, sociolinguistic, and psycholinguistic processes which underlie its development. Together they would be a resource for the systematic analysis of second-language acquisition as well as of a number of second-language phenomena – for example, transfer. This therefore implies that the theory of Interlanguage reflects the components of any good theory, namely the ability to transform thoughts, to predict, and to understand.

Chapter III

Methodology

3.1 Introduction

In order to discuss methodology in social sciences coherently we need to draw a distinction between methods and methodology. Such a distinction must be regarded as a map to guide our exploration. Let us now look at some broad distinctions between methods and methodology which might bring insights into the complexity of the researching process. One of the most powerful developmental trends of the past decade was a shift from a concern with the traditional discrepancy between methods and methodology to one with an interpretive paradigm. Accordingly, the meaning of methods had been extended to include concept and hypothesis formation besides the techniques associated with the positivist model—techniques and procedures used in the process of data-gathering. As a consequence, the perspectives of methodology in modern social science research have been changed along with the change of method perspectives. Methodology is therefore looked upon as a means to describe and analyse these methods (Kaplan, 1973). In that sense methodology shows the limitations and resources of these methods and identifies their presuppositions and consequences. Hence, the particular value of methodology is that it will enable us to understand the process of a scientific enquiry in addition to its products.

This development deserves our attention because it indicates a valuable new direction of thought in social science research: to overcome the narrowness, rigid-

ity, and the imbalances which have resulted from seeing the nature of the research process purely or mainly in terms of the traditional understanding of the notion of method. Our goal in this chapter will be, on the one hand, to represent the scope of those techniques and procedures used in data-gathering. On the other, we will consider the reliability and validity of the instrumentation applied in the present research. This development can potentially contribute to the interpretation of research as a search for dependable solutions to problems through planned and systematic approaches of data collection, analysis and interpretation. More intangible, but nonetheless important, are the lasting effects of research on the advancement of knowledge and promotion of progress. Research is thus expected to enable man to relate more effectively to his environment, to accomplish his purposes, and resolve his conflicts (Mouly, 1978). However, social science research has tended to welcome both the normative and the interpretive perspectives. Ultimately, interaction between these two perspectives is needed to develop a sound knowledge base which ensures a sound research contribution.

3.2 The Choice of Subjects

In the last few years, a few studies on research methodology in the social sciences have begun to focus more closely on the conditions of sampling so as to overcome the weaknesses inherent in the broad and ill-defined sampling categories. We can only briefly illustrate here what directions this research is taking. The investigators have realized the significance of sampling which, in turn, underlies the process of defining the population upon which the survey is to focus as a preliminary consideration. What these investigators, for example, Baily (1978), and Cohen et al (1989), have been looking for are comprehensive models for social research which would be helpful in the overall planning of a survey. Cohen et al

(1989) recognizes two methods of sampling: one yields probability samples and the other yields non-probability ones. In what way does the former method differ from the latter? As the term 'probability' implies, probability sampling emphasizes the fact that the probability of selection of each respondent is known, whereas it is unknown in non-probability samples. The researcher of the present study has adopted the former method of sampling. We shall now deal with the various methods of probability sampling needed in this study.

In the attempt to clarify the methods of sampling employed in the present study, a number of methods have been introduced, all of which are relevant to probability sampling. One is stratified sampling (Cohen et al 1989:102), which divides the population into homogeneous groups (Bilingual, Monolingual 1, and Monolingual 2), each group containing subjects with similar characteristics, for example, (a) age, (b) linguistic repertoire, (c) age of foreign language learning/age of exposure to the target language, and (d), educational level (third year, secondary level, scientific stream, high intermediate foreign language level). It should be added that the Bilingual group as well as the Monolingual 1 and Monolingual 2 groups represent the Armeninan and Arab groups respectively in the context of the present study. If we now focus on those characteristics, we can also identify similar features among the groups themselves: (1) age; (2) sex; (3) the linguistic repertoire of the Monolingual 1 and Monolingual 2 groups, namely Arabic (see chapter IV); (4) the age of foreign language learning/the age of exposure to the target language of the Bilingual and Monolingual1 groups (see chapter IV); and (5) educational level (third year, secondary level, scientific stream, high intermediate foreign language level).

In the present study, stage sampling is related to stratified sampling as an

additional essential method of sampling which adequately represents probability sampling. However, it is necessary to evaluate the importance of the application of another method of probability sampling in the present study. In this connection, we must go back to the ultimate objective of sampling, which is to define the population and to assess the representativeness of the sample. We have thus had to use stage sampling as an extension of stratified sampling in order to avoid the limitations inherent in the latter. Multiplicity of methods can be looked upon as a necessary means to avoid the limitations of the instrumentation applied in the research process (Burroughs, 1971; Cohen and Marion, 1989). We take the view that stage sampling is appropriate for the selection of samples in stages; samples will be taken from samples.

We will now turn to the stages at which the stage sampling occurs. To reach this goal, the researcher, who is aware of the administrative problems in gathering the samples of the groups concerned which are large and widely dispersed all over the country, has selected a number of schools at random, and from within each of these schools he has selected a number of classes at random, and from within these classes he has selected a number of pupils/ English language learners. The researcher, therefore, has endeavoured to select the samples from smaller groups with characteristics similar to the population as a whole, i.e. linguistic repertoire, age, and age of learning English/age of exposure to the target language. Accordingly, the sampling process has been divided into four stages in which the researcher has selected:

1. a number of schools from Aleppo city, Syria
   - Aleppo College / Boys
   - Aleppo College / Girls

- Al-maari School / Boys
- Al-mahaba School / Girls
- Karen Jeppe Armenian College / Mixed;

2. a number of classes from the above mentioned schools;

3. an exact proportion of male to female pupils/ English language learners (96 males and 96 females) from these classes to fill out the Foreign-Language Learner Questionnaire (see 3.3.1)—the first phase of instrumentation in the present study; and

4. selecting an exact proportion of males to females pupils/ English language learners (12 right-handed males and 12 right-handed females) from within the already selected groups mentioned above for interviewing (see 3.3.2)—the second phase of instrumentation in the present study.

Now that we have discussed the methods of sampling employed in our research we will attempt to highlight the parameters that influenced the learning of English as a foreign language. The following parameters are proposed as conditioning the foreign-language learning process:

1. English is taught by non-native speakers;

2. English is typically taught by grammar-translation method/traditional method;

3. English is taught for three hours and thirty minutes a week (four lessons per week);

4. English is taught in the artificial situation of the educational school;

5. The class size is fairly large (between 40–52 students); and

6. The students have no access to language laboratories.

With these factors it is possible to indicate that the Syrian educational system is designed for language learning to be learning with intent or deliberate learning which goes along with Krashen's (1978) notion of the degree of awareness on the part of the learner. In other words, Krashen distinguishes between conscious processes of language learning and the subconscious processes of language acquisition. It should be added though that the attribution of 'acquisition' to natural language setting and 'learning' to educational treatment is not rigid, i.e. language learning may also take place in the target language (TL) setting, and acquisition in the classroom. Nevertheless, the subjects of this study, in our view, have not been introduced to the target language environment with opportunities for constant and varied use of English. The English language is treated more deliberately and analytically, and as such the classroom can be considered the place for language 'learning' in Krashen's restricted sense — through systematic study and deliberate practice guided by teaching. We can further argue that under the above mentioned conditions Krashen's Monitor Model (1978), which acts as a kind of editor, comes into play (see the examples in the tables of section 5.4). Therefore, it is not unreasonable to claim that the subjects here had little opportunity for acquisition processes to come into operation.

3.3 Instrumentation

As soon as we try to investigate the notion of instrumentation in social science researches, we come up against the most fundamental question about the function of instrumentation. What is the best way of collecting data? The obvious reason for considering the role of instrumentation is that it constitutes the core issue in

any social science research. However, there is no suggestion here that there is one single 'right' instrumentation in carrying out enquiries in the social sciences. That is why the relationship between instrumentation and the purpose of the study needs clarification. The role of the researcher is thus to conduct the instrumentation in hand as systematically and as adequately as possible in order to fulfil the purpose of the study. In the present study the researcher has applied two methods of instrumentation, (a) the Foreign-Language Learner Questionnaire, and (b) the Non-Directive Interview.

3.3.1 The Design of the Foreign-Language Learner Questionnaire

In exploring this area it is useful to begin with defining what a questionnaire is. Without necessarily subscribing to all the definitions of a questionnaire, it is a list of questions to be answered by a group of people to obtain facts or information about their views. In principle, questionnaires as research techniques are concerned with eliciting information and usually researchers operate with such a notion. Nevertheless, the identification of the objectives is an important component in designing questionnaires.

Accordingly, the present researcher has used a self-completion questionnaire to investigate learner-factors/variables of the groups involved in the present study—(1) the Age Factor and (2) the Motivation and Attitude Factor which we shall refer to in Chapter IV. However here we shall confine ourselves to an outline of the test battery employed. This test can conveniently be placed into a model for the general study of affective and personality factors/variables (Attitudes and Motivation) which has been recently developed by a language researcher, Gardner (1985a). As will be seen in the forthcoming chapter (Chapter IV), the interest in

a systematic investigation of affective and personality factors in language learning can be dated back to the early fifties. In short, the test battery in hand is the outcome of consistent research over a period of twenty five years by Gardner and his colleagues. The advantage of employing this test battery is that it offers a useful map for research on affective and personality factors/variables in any language learning context. Hence, it is clear from Appendix (A) that the researcher has used a modified form of the Attitude/Motivation Test Battery developed by Gardner (1985a) in order to meet the goals of the present study.

If we accept the view that an ideal questionnaire is clear, unambiguous and uniformly workable, and that its design must minimize potential errors from respondents (Davidson, 1970), we must examine to what extent this is reflected in our question construction. This does not mean to say that our research should match those methodological ideals since it is recognized by most scholars that they are impossible to attain. However, these qualities constitute the basis for an overall scientific description of the given questionnaire. With these qualities in mind, the researcher has recognized the pitfalls in question construction identified by Cohen et al (1989:108) and aimed at avoiding the following in his modified form of the Attitude/Motivation Test Battery mentioned earlier in this chapter:

- leading questions;
- highbrow questions;
- complex questions;
- irritating questions;
- negative questions; and
- open-ended questions.

Besides the question construction on which the researcher has laid the main emphasis in formulating the questionnaire, he has focused on other areas which have a direct bearing on the response level in order to maximize it. The following account of the factors which are likely to secure a good response rate are derived from Hoinville and Jowell's (1978) planning of postal questionnaires. Nevertheless, it can also form the basis for making self-completion questionnaires. For our Foreign-Language Learner Questionnaire construction, the researcher focused on the following qualities needed in order to maximize the response level: (a) the appearance of the questionnaire (easy and attractive), (b) clarity of instruction, (c) repeating the instructions as often as necessary, (d) the use of sublettering questions, (e) contents which show that the enquiry is intended for them, (f) content arrangement which starts with simple questions and proceeds to more difficult ones, and (g) a brief note to thank the respondent for his/her participation (See Appendix A).

3.3.2 The Non-Directive Interview

As is the case in so many social science research theories, the interview as a specific research tool involves direct verbal interaction between individuals for the purpose of obtaining research-relevant information. The main function of interviewing can thus be described as a means of data gathering. In a pioneering study Tuckman (1972) was among the first to suggest that research interviews can: (1) provide access to the individuals' knowledge/information, values and preferences, as well as attitudes and beliefs; (2) help in identifying variables and relationships; and (3) validate other methods used in the research project. In this scheme the researcher/interviewer and the interviewee are accorded different roles for different purposes. The researcher of the present study confines himself to the purpose of

providing access to the interviewees' knowledge/information regarding their inter-language (IL) as foreign language learners of English.

Having established purpose identification as a crucial component in a research interview, we must consider the kind of interview that has been used as a research tool. According to the account of Cohen et al (1989:309), there are four kinds of interview that may be applied as research techniques: (1) the structured interview; (2) the unstructured interview; (3) the non-directive interview; (4) and the focused interview. For our purposes it is not necessary to explore all these kinds of interview. This task requires a more specialized study. Nevertheless, the non-directive interview will be considered in order to obtain the background knowledge to demonstrate its usefulness as a research tool in the present study. At the same time it should be pointed out that the nature of the non-directive interview is imbued with characteristics which are common to both informal and formal interview settings.

The development of the non-directive interview in part parallels that of the therapeutic interview, and is in part so intertwined with it that it is difficult to distinguish one from the other. In spite of this, it is questionable whether the characteristics of a therapeutic interview constitute an appropriate technique in social science researches. However, in the present study the researcher relies on the non-directive interview as a research technique since:

"The principal features of it are the minimal direction or control exhibited by the interviewer and the freedom the respondent has to express his subjective feelings as fully and as spontaneously as he chooses or is able"
(Cohen, et al 1989:309).

Therefore, if we recognize that therapeutic and non-directive interviews are intertwined, it is possible to suggest that this quotation reflects the view that the non-directive interview has grown out of therapeutic interviews.

The non-directive interview as a research technique for interlanguage studies thus possesses the characteristics which are necessary for adequate data elicitation. The first point to be made here relates to the notion, suggested by Tarone (1988), that 'natural' language data is necessary to consider in any study of interlanguage (IL). This notion supports the view that natural language data is an extended discourse over which the learner has some control. According to this conception, the non-directive interview, as a research technique which emphasizes the fact that the respondent has to have the freedom to express his/her feelings, can be a tool for eliciting interlanguage (IL) data.

The second point relates to Labov's methodological axioms, upon which Tarone (1979,1983) founded the paradigm of her work. Tarone recognized the relationship between Labov's axioms and linguistic researches generally, and interlanguage (IL) studies particularly. These axioms are (1) Style Shifting; (2) Attention; (3) Vernacular; (4) Formality; and (5) Good Data. They are, in Tarone's view, the basic axioms of the Observer's Paradox which characterize the development of interlanguage (IL) study. Basically, the present researcher, in his plan for research methodology in connection with data elicitation, has adopted Labov's fifth axiom as summarized by Tarone (1979):

"Axiom Five: Good Data. The best way to obtain enough good data on any one speaker is through an individual tape-recorded interview: a formal context".

This methodological axiom, which is recommended by Tarone for interlanguage

(IL) studies, forms on the one hand an important part of the procedures required for data elicitation. On the other hand, it is not contrasted with the characteristics of non-directive interviews.

3.4 The Validity and Reliability of the Instrumentation

In principle, the task of research is to present adequate information and, at the same time, dispense with inadequate information. This will in turn provide a stimulus for fresh theorizing. Good methodological techniques are necessary to fill these knowledge gaps. However, unless the instruments used in research projects are valid and reliable, we will waste our energies in futile controversy and fail to achieve the research goal/goals. We do not mean to say that there are distinct research instruments established as yet in interlanguage (IL) studies. Instrumentation in interlanguage (IL) studies— perhaps more than in many other social science studies—has been influenced by the swings of fashion and opinion and has never aroused partisanship for particular viewpoints. Nevertheless, the researcher of the present study is concerned with the way the instruments have been applied to seek information in a meaningful and significant way.

As we saw in the review of literature (Chapter II), research is prompted by fundamental questions or practical needs. The research instruments of data gathering and data analysis are essential to deal with reasons for research. In the present study, we are concerned with two main areas; namely, the investigation of attitude and motivation in foreign language learning of the groups which are the subjects of research, and the examination of the interlanguage of the groups at every level: phonological, morphological, syntactic, lexical and pragmatic. In order to pursue these objectives appropriate instruments of enquiry by which the data can be

gathered are needed. It is this interdisciplinary combination of research objectives with research methods/instruments that determines the research design. The researcher, therefore, employed the following instruments in data gathering in order to meet the above objectives respectively:

a. The Foreign-Language Learner Questionnaire, and

b. The Non-Directive Interviews.

Our choice of a questionnaire, which is based on Gardner's (1985a) Attitude/Motivation Test Battery as an important source to observe a few learner factors, can be attributed to two reasons. First, the questionnaire as a research instrument is recommended in social science researches and specifically in attitude and opinion investigations. Secondly, Gardner's (1985a) Attitude/Motivation Test Battery, which we relied upon to formulate our modified form of the same test battery in the present study, is the outcome of systematic and extended investigations of affective and personality factors in language acquisition and learning. However, as has been stressed earlier in this chapter, the important task of the Foreign-Language Learner Questionnaire is to determine which groups can be involved in the present study for interlanguage data collection. It is based upon the examination of the learner factors/variables. Non-directive interviews have also been used with a limited number of English language learners as the only source to collect interlanguage (IL) data.

3.4.1 Validity

Validity can be defined broadly as the degree of effectiveness of the research instruments in actually measuring what the researcher intends to measure. Such

a definition is in keeping with the recognition of the importance of validity in the view of Hammersley and Woods (1987:7):

"More important than almost anything else, though, is to be aware of, and to make explicit, the threats to validity that seem likely to be operating on one's results".

In short, the validity component can be regarded as an essential part of the total research enterprise in all its phases. However, the fact that the validity component of any research is so important does not mean that there is a perfect research design. Therefore, it is much more economical and productive if scholars are not committed to any particular research techniques/tools but choose those which are practical within the available resources.

The validity of the questionnaire can be seen from two viewpoints: content and practical. Content validity can be referred to any research technique if it seems to be succeeding in achieving the purpose for which it is designed. The Foreign-Language Learner Questionnaire of the study in question has responded to the theoretically interesting and practically important questions of whether learners with different linguistic repertoires would show different attitudes and motivations towards learning a foreign language, namely English. In this respect, mention should be made again of the objective underlying the implementation of the Foreign-Language Learner Questionnaire, which is to investigate the learner factors/variables. This investigation can thus be described as a systematic variable control.

However, the researcher considers that the Foreign-Language Learner Questionnaire is a valid means of investigation, firstly, because Gardner's (1985a) Mo-

tivation/Attitude Test Battery, which has been relied upon to a very large extent in the present research, was built on previous widely recognized studies. It is often said that content validity is a matter for expert judgement (Freeman, 1962). How, then, did the researcher verify the content validity? It is sufficient to point out here that the judgement of experts, which is a crucial basis for content validity, has been implicitly introduced in the present research with the introduction of the modified form of the above mentioned test battery as a research technique to investigate learner factors/variables. The validity of the Foreign-Language Learner Questionnaire is, secondly, supported by the fact that it has been practical. The high rate of completed questionnaires as well as the respondents' favourable comments in the follow-up contacts (interviews and discussions) support the view that the questionnaire is a research technique of practical value.

One of the crucial contributions of the non-directive interview to the present study of interlanguage (IL) is that it provides data which reflect the interviewees' performance or achievement in foreign-language learning. An important implication of this research tool is that it facilitates the inference of the interviewees' comprehension and production ability. Hence the non-directive interview, which has been derived from therapeutic interview, is a practical technique for investigating the interviewees' foreign-language performance/interlanguage (IL). This characteristic of the research technique is particularly important because the present researcher feels that it is redundant to study the content validity of the non-directive interview. Broadly speaking, the non-directive interviews in the present study have not been used as a tool to elicit information with the intention of assessing or selecting interviewees, but rather as a tool to gather interlanguage (IL) data. In other words, the data that the researcher has available through non-directive

interviewing are believed to be linguistic data and therefore it is not necessary to check the causes of content validity or invalidity.

3.4.2 Reliability

As we saw in (3.4.1), the research instruments of the present study have sufficient validity. Nevertheless, ideally, research instruments must be backed by the notion of reliability. In fact, there is no absolute demarcation between reliability and validity. This is recognized by Green (1963) who believes that reliability is a part of validity. What do we then expect from valid research instruments? In short, that they should provide us with accurate and consistent results. Such an expectation has offered orientations for scholars to define reliability. Without necessarily subscribing to all the definitions of reliability, some lay emphasis on:

"the extent to which a test produces consistent results when administered under similar conditions"
(Hatch and Farhady 1982:244).

Others connect reliability with the aspects of design and layout of the research instruments which avoid ambiguity and consequently maximize the response level. In our view the level of reliability is improved by close attention to the interaction of the format and the content of the research instruments.

It is useful to remember the distinction which has been made between validity and reliability and to recognize a twofold connection. In other words, reliability can be viewed as a necessary component of the content validity and the latter demands expert judgement, as was pointed out in (3.4.1). In the same way, the researcher assumes that the Foreign-Language Learner Questionnaire is a reliable

research instrument contentwise because it has been based upon Gardner's (1985a) Motivation/Attitude Test Battery. This test battery has passed the critical examination of the experts and is widely applied. Moreover, the Foreign-Language Learner Questionnaire is well designed to avoid ambiguity and its format makes it relatively easy to fill out. Accordingly, the reliability of the questionnaire in question is enhanced by its design and layout. As with the other research instrument (the Non-Directive Interview), the researcher of the present study believes that reliability, like content validity, is a redundant notion (see 3.4.1). In other words, this assessment is based upon what has been said above (3.4.2 and 3.4.1) i.e. that firstly, reliability is connected to content validity; and secondly, the researcher of this study has exclusively sought interlanguage (IL) data. Therefore, it is clear that the researcher assumes that the research tools employed in this study are relatively reliable.

Despite the fact that validity and reliability are prerequisites to an understanding of the application of research tools to social science researches, the conclusion we have drawn from investigating the research instrumentation involved in this study is that they are redundant notions in relation to interlanguage (IL) data elicitation.

3.4.3 Methodological Limitations

As soon as we assess the validity and the reliability of the research instruments used in the present research project, we must take into account their methodological limitations. This does not mean that we must give allegiance to particular research techniques, since it is unrealistic to achieve the perfect research design. For research instrumentation it is more important to evaluate the extent to which

accurate information is produced. The researcher may attempt to do justice to the research project by laying more weight on the validity and reliability of the research tools employed in the research in question while making at least some allowance for the inherent methodological limitations in the research tools themselves.

We can ask ourselves to what extent the responses in the Foreign-Language Learner Questionnaire reflect accurately the learners' motivation and attitude. It is one thing to believe that the questionnaire concerned is simple, accurate, and well-established in the literature, it is quite another to highlight the unconscious biases in self-completed questionnaires. This is a problem for language studies as much as for social science researches. Nevertheless when foreign-language learners are asked to tick statements they are always provided with a variety of choices and an additional 'No Opinion' choice alternative (see Appendix A). If we accept the view that the Foreign-Language Learner Questionnaire as a research instrument has reasonably good validity and reliability, we explore the source of unconscious biases in the learners' responses. Hence, empirically speaking, self-completed questionnaires cannot present us with completely unbiased responses but they can provide us with sufficiently valid and reliable data.

In a similar vein to the identification of the methodological limitation of the Foreign-Language Learner Questionnaire, we assess the second research instrument applied in the present study, namely the 'Non-Directive' interview. In this connection, it is worth noting that interviews, in a wider sense, have some things in common with self-completed questionnaires and each instrument has an advantage over the other in certain respects. At this point, we are mainly interested in considering one of the advantages of the self-completed questionnaire over the non-directive interview. It is anonymous and as such it encourages greater honesty

and spontaneity in empirical data collection. The obvious reason for considering this advantage is that it is at the same time the inherent methodological limitation of the non-directive interview. A further implication of this advantage or the inherent methodological limitation of the non-directive interview is closely linked to Labov's 'Observer's Paradox' notion. This phenomenon, as summarized by Tarone (1979), may well be responsible for some element of formality in the non-directive interviews employed in the present study as a research technique. In other words, the interviewees have probably paid more than the minimum amount of attention to their speech because they are being observed by the interviewer—the researcher in this context. However, in spite of the above mentioned methodological limitation, the non-directive interviews have allowed us to collect relevant data sufficient to reflect the various aspects of the foreign-language learners' interlanguage (IL).

As social science research has become more empirical, the use of pilot studies has become a necessary procedure to assess the validity and reliability of the research instruments. Researchers have of course always been aware of the fact that pilot studies are necessary to investigate whether the research instruments will measure accurately and efficiently what they are designed to measure. The answers to the question of how a pilot study is necessary have been varied. Therefore, the discovery of the practicability of the Foreign-Language Learner Questionnaire as a research instrument could be the primary aim of a pilot study in the present research project. Accordingly, a pilot study can be used to find out if the Foreign-Language Learner Questionnaire will be easily understood and whether the learners have any reservations about filling it out. In this study, however, the researcher does not subscribe to the above understanding of pilot studies. In the researcher's view a pilot study of the Foreign-language Learner Questionnaire is

not necessary for the following reasons:

(a) The questionnaire was administered by the language teachers of the foreign-language learners in the regular classrooms during the normal class time.

(b) The questions of the questionnaires were translated into the mother tongue of the learners by their language teachers whenever required.

(c) No time limit was set for the completion of the questionnaire.

(d) Confidentiality was assured verbally by their language teachers and through the questionnaire itself by providing the choice of anonymity (see Appendix A).

3.5 Data Collection Procedures

Data for the present study were collected during March-May, 1990. The researcher made personal contacts with the relevant departments (the Syrian Ministry of Education and the school authorities) during his visit to Syria in the first year of his study in order to have access to the respondents. The objectives and methods of the study, the Foreign-Language Learner Questionnaire and the Non-Directive Interview, were explained thoroughly to the school authorities and the dates for administration were fixed. According to the Syrian educational regulations, the researcher was not allowed to administer the questionnaire concerned in the regular classrooms. The researcher had, therefore, to ask the English language teachers in the schools involved in this research to administer the questionnaire in their language classes during the normal class time.

The objectives and the methods of study had also to be explained to the language teachers by the researcher. Furthermore, he gave verbal directions to the

English language teachers before they started the administration of the Foreign-Language Learner Questionnaire. All materials were printed in English since the target groups were learners of English as a foreign language. The English language teachers, the research assistants in this respect, had to read the questions to the respondents before they were asked to answer them. No time limit was set for the completion of the Foreign-Language Learner Questionnaire, but most learners responded in 45-50 minutes. 192 questionnaires were distributed and all of them were completed and returned to the researcher.

Unlike the Foreign-Language Learner Questionnaire, the non-directive interviews were conducted by the researcher himself but not in the regular classrooms or during the normal class time. The headmasters and headmistresses of the schools involved in this study kindly agreed to provide the researcher with quiet rooms to conduct his interviews during this period of study. The interviewer/researcher had adopted the following interviewing criteria at the interviews:

(a) At the meeting, the interviewer should introduce him/herself;

(b) The interviewer should assure the interviewee of the confidentiality of his/her responses;

(c) The interviewer should tell the interviewee that he/she (the interviewer) is here to learn, not to pass any kind of judgement;

(d) The interviewer should brief the interviewee as to the purpose of the interview and try to make him/her feel at ease;

(e) The interviewer should not argue and let the interviewee lead, but he/she should cut him/her short in places if his/her responses become redundant;

(f) The interviewer should not be a hypocrite because he/she is not a salesman/saleswoman; and

(g) The interviewer should not forget to express his/her gratitude when the interview is completed.

The researcher got the interviewees' assent to tape record them in advance of his visits to conduct the interviews. He tape recorded interviews with 24 interviewees, while only two of them wanted some of their friends to attend their interviews. A 'National RX-C36F' tape recorder with ordinary 60-minute tapes were used for tape recording and a 'Sanyo TRC 9010' was used for data transcription. No time limit was set for the interview, but on average each interview lasted between 15-25 minutes. A selection of magazines (for example, Science, Sports, Arts, Fashion, and Musics) were provided for the interviewees to help them initiate discussions. Each interview usually included argumentative, descriptive, and narrative topics. Finally, the data were transcribed, analysed and interpreted in the light of the research objectives.

3.6 Data Analysis

The primary purpose of data analysis is to enable accurate results to be obtained. This implies that the practicality of the data gathered, that is to say whether they are easy to manipulate and analyse, is a necessary goal to keep in mind. If the ultimate objectives of practicality are easy manipulation and analysis of the obtained data, then the researcher had to consider two factors. He first considered the fact that the methods of data collection would meet the needs of the type of analysis arranged in advance and secondly, that the data could be easily coded, manipulated and analysed. However, it is the importance of the notion

of practicality which explains why the present researcher used two kinds of data analysis, quantitative and qualitative. Let us now consider the measures that have been used to analyse the data.

3.6.1 Quantitative Analysis

This kind of analysis involves measuring the empirically quantifiable characteristics of social behaviour. Accordingly, the researcher has adopted the quantitative method to analyse the data of the Foreign-Language learner Questionnaire using a system called the SPSS-X (Statistical Package for Social Sciences). It should be noted that using the SPSS-X system involves accurate codification and computation of the data concerned for each individual sample. Since the accuracy of codification and computation is a point of some importance, the researcher consulted Dr Williams and Dr Roberts (Computer Centre, Durham University) regarding the codification and computation of the data of the questionnaire in question. The present quantitative analysis, therefore, involved a number of procedures:

(i) the data were coded;

(ii) the data were entered on computer cards;

(iii) total frequencies were computed for each individual sample; and

(iv) the chi-square test χ^2 was applied in order to find out the 'Significance Level' of the divergency in the frequency distribution.

However, it must be remembered that the quantitative analysis is only the first step of data analysis in this study. The researcher proceeded to analyse the data of the non-directive interviews qualitatively.

3.6.2 Qualitative Analysis

From the point of view of the social sciences and language acquisition and learning, the qualitative analysis can be seen to be of great importance. In essence, it analyses the qualifiable characteristics of the linguistic and non-linguistic behaviour of individuals. It contrasts with the quantitative analysis which is used predominantly in natural scientific investigations. The distinction between 'social' and 'natural' sciences, therefore, highlights not only differences in topic but also differences in approach chosen for data analysis.

In this study the researcher used the qualitative analysis of the data obtained by non-directive interviews to investigate the interlanguage (IL) aspects of the foreign-language learners. With this framework the researcher saw that the application of a linguistic profile is an appropriate method to provide a comprehensive description of the learners' data (Crystal, 1982:4). What exactly is a 'linguistic profile'? For Crystal it is a *"principled description of just those features of a person's (or group's) use of language which will enable him to be identified for a specific purpose" (Crystal 1982:1)*, and which in the foreign-language learning context refers to the analysis of achievement. Nevertheless, the principle which we find most helpful is based on the fact that profiles are not language ability statements but rather they are summaries of the learners' performance.

As an approach, linguistic profiling is contrasted with perhaps more familiar educational use of language tests. For the present, without going into the differences, it is enough to identify the advantages of the use of profiling for data analysis. The researcher of the present study adopted profiling on the following grounds : (a) profiles are based on several years of research and clinical application;

(b) profiles are based on language samples which are (supposedly) spontaneously and naturally produced; (c) profiles aim to be accurate and comprehensive— i.e. they are not selective and limited in the linguistic forms which they focus on; (d) profiles do not necessarily reduce to a score as a summary of achievement, and require sound evaluation; and (e) profiles do not require administration and have no constraints of time. Although the researcher does not deny the usefulness of tests, he nevertheless comes down firmly on the side of profiling, because it is in harmony with the non-directive interview as a research technique applied in this study to elicit language data over which the interviewees/the foreign-language learners have some control. There is thus coordination between the method of data collection and that of data analysis. Yet, it should be added here that in many ways profiling and testing are the the two sides of one coin, namely language assessment. It would be inaccurate to see them in opposition, for they are in reality complementary.

Let us now focus on the stages in the profiling procedure as adopted from Crystal (1982:9) and used by the researcher in the present study:

(i) a sample of interlanguage (IL) data is obtained;

(ii) the sample is transcribed;

(iii) the transcription is analysed;

(iv) the analysis is profiled on a summary chart;

(v) the pattern on the profile chart is assessed; and

(vi) the profile pattern is given an interpretation in neurolinguistic and linguistic terms.

It is, however, worth noting the crucial role of the second stage. It involves accurate transposition of linguistic and non-linguistic information from the taped sample into a written form. To attain a high degree of transcriptional reliability, the researcher used primarily orthographic transcription and phonetic transcription wherever required, to indicate the nature of the phonological problems. Nevertheless, it is unlikely that an adequate data transcription can be done without sufficient contexualization. Essentially, the transcription of the data involved the employment of a number of transcriptional features developed by Crystal (1982:11), (see Appendix B).

It can be seen from the above that the essential strength of a profile procedure lies in it being a useful tool in the description of language data. It must be stressed though that profiling is a procedure that provides a comprehensive qualitative description of language output rather than simply quantitative information. Furthermore, it is assumed that the interpretation of the profile will give 'insights' into the achievement of the foreign-language learner and the nature of his/her errors, and that these 'insights' will in turn be interpreted in foreign-language learning terms.

3.7 Summary

In the overview of the current research methodology, definition of the population involved, data collection procedures, and data analysis strategies were considered. It should again be pointed out that the discussion of the role of the methodological instruments/techniques in this research project has largely been confined to the questions of attitude and motivation of the foreign-language learners concerned as well as their interlanguage (IL). In concluding this part of our

study, it is interesting to note that the difficulty in the discussion of the research methodology issue has been due to practical reasons, yet:

> *"...no research can match methodological ideals...We must bear in mind that even studies that fall far short of the ideal can make a valuable contribution to our understanding...The methodological effectiveness of a study is what it can tell us about the phenomenon investigated in relation to what we want to know and what we already know"*
> *(Hammersley and Woods, 1987:11).*

In the following chapters the presentation and analysis of the results of this study are discussed in detail.

Chapter IV

Learner Factors

4.1 Introduction

Our goal in this chapter will be to provide sufficient background and an overview of some of the learner factors which have been recognized, emphasized, and investigated for decades in the fields of language learning/acquisition[6] and language pedagogy. We have tended to approach learner factors with the expectation of finding out to what extent they are crucial in the present study. With this in mind, we should be able to identify any relationship between learner factors of the populations involved in this study (Bilingual, Monolingual 1, and Monolingual 2) and their learning outcomes. In other words, this enquiry into learner factors will make it possible to raise the validity of further findings regarding their learning outcomes. This is not intended to be a comprehensive study of learner factors as this would require more detailed treatment than we need here for our purposes. Nevertheless, it is necessary to state that language learners are or should be the central figures in any language research.

A useful result of the many recent studies on foreign/second language learners/acquirers as well as foreign/second language learning/acquisition has been that several researchers have proposed a framework of essential factors to be taken into account in interpreting foreign/second language learning/acquisition. In order to

[6] See on this distinction (1.2) and (3.2).

understand the learner factors, we have to visualize them as an internal system influencing the learning process and outcome.

For our purposes it is necessary to attempt to observe a few learner factors— (1) the age factor, (2) the motivation and attitude factor— so that we have the background to highlight their crucial importance in the present study.

4.2 The Age Factor

It is fairly clear, in looking back, that the 1950s brought an increased awareness of the importance and complexity of age as a factor of language learning/acquisition. This, of course, was nothing new because the age factor was most noticeable in earlier psychological literature (for example, Tomb 1925) where the ability of young children to learn languages easily was recognized.

As we saw in in (2.2.4.1), the whole question of the role of the age factor in relation to the human mind for language learning/acquisition was investigated; and it was the personal contribution of Penfield (1953,1959), a neurophysiologist at McGill University in Montreal, that drew most attention to the implications of this for the scientific study of language. By both his neurological contribution and personal conviction, Penfield succeeded in defining the interaction between age and maturity, on one hand, and mental development and learning, on the other. Penfield's argument is that the early years before puberty usually offer a biologically favourable stage for language learning/acquisition. During the same period, Penfield's argument has received theoretical support from the 'nativist' view of L1 acquisition (e.g. Lenneberg, 1967). In subsequent years, others, like Krashen (1973, 1975a, 1981), have advanced an opposing view against the critical-period hypothesis.

Whatever specific findings have emerged as generalizations, we are a long way from any comprehensive and conclusive research evidence concerning language acquisition/learning generally and the optimal age question specifically. Nevertheless, despite the existing gaps and limitations, it should be clear that a great deal of progress has been made in understanding language acquisition/learning. We must therefore realize that no limit can be set and that learning by the same old processes continues through life, though at a rate that diminishes so sharply that it seems almost to come to a stop well before adolescence. Until we have more conclusive research evidence, the following quotation may serve as a summary of the complexity of the age question:

"adults and older children in general initially acquire the second language faster than young children (older-is-better for rate of acquisition) but child second language acquirers will usually be superior in terms of ultimate attainment (younger-is-better in the long run)"
(Krashen et al 1979:574).

4.2.1 Relevance of Age Factor to the Present Study

The simple idea underlying the above short review of the optimal age question is to show clearly and precisely whether the age factor has a role to play in the choice of the subjects for the research in hand. It therefore provides a pragmatic demonstration, potential and actual, of the factor that age is likely to play important role in their normal language background.

To begin with, let us first look at Table (4.1), Figure (4.1a), and Table (4.2),

summarizing the age factor/variable in this research as follows:

Population	*Number*	*Mean Age*	*Median*
Bi/Male	32	18.28	17.95
Bi/Female	32	18.03	17.95
Mono1/Male	32	17.03	17.95
Mono1/Female	32	16.81	17.95
Mono2/Male	32	17.87	17.95
Mono2/Female	32	18.34	17.95

Table 4.1: Mean Age

What emerges from Table 4.1 is the important fact that the mean ages of the populations involved are quite close to the median (17.95) as represented in the following figure:

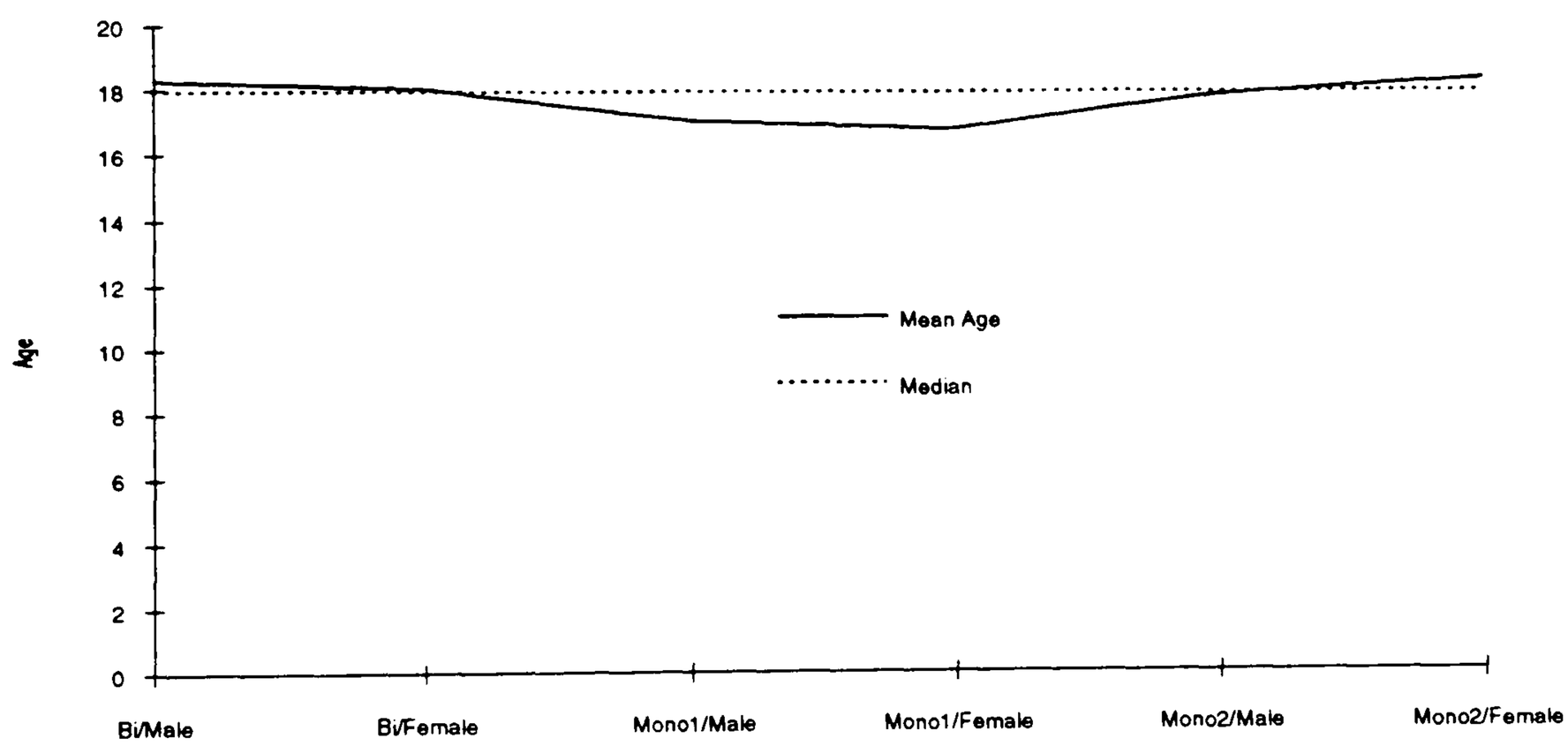


Figure 4.1a: Mean Age

At this stage, it is easy enough to note that the age factor/variable does not exist and therefore methodologically speaking, it would seem sound to obtain data from these populations.

Similarly, if we observe Table 4.2 illustrating the mean age of language acquisition and learning,

Population	*Number*	*Type of Language*	*Mean Age*
Bi/Male	32	Armenian	3.4
		Arabic	4.9
		English	6.2
Bi/Female	32	Armenian	3.5
		Arabic	4.8
		English	6.1
Mono1/Male	32	Arabic	3.3
		English	5.6
Mono1/Female	32	Arabic	3.7
		English	4.7
Mono2/Male	32	Arabic	5.7
		English	12.1
Mono2/Female	32	Arabic	6.2
		English	12.2

Table 4.2: Mean Age of Language Acquisition and Learning

we can see that there is a big age gap in learning English between the Bilingual and Monolingual 1 populations, on the one hand, and the Monolingual 2 population on the other. The question thus presents itself here: 'Can the linguistic data from the Monolingual 2 population be linguistically and methodologically justifiable?' In order to decide about this, we have to recognize that the optimal age question was and still is the most frequently debated issue, as we have seen earlier in this chapter. In line with validity control procedures, no data from the Monolingual 2 population has been included for comparative study. In other words, it would seem methodologically unsound to attempt to introduce data reflecting some features of variability.

4.3 The Attitude and Motivation Factor

4.3.1 The Concept of Attitude

In language acquisition/learning and teaching we often use the term 'attitude'.

However, we must point out that the concept of attitude dates back to the beginning of the nineteenth century as a major concern in social psychology. But it is only from about 1950 that attitude has become the subject of a more consistent and deliberate research effort. Consequently attitude has come to be seen as multi-component phenomenon. There is a tendency among most social science theorists to agree that the term 'attitude' refers to some aspects of the individual's response to an object or a class of objects. In other words, there is not a distinct 'attitude' definition established as yet. The following definition can accommodate what has been said about attitude:

"...an organized and consistent manner of thinking, feeling, and reacting to people, groups, social issues or, more generally, to any event in the environment" (Lambert and Lambert 1973:72).

In principle, thus, attitude can predict the individual's predisposition to respond consistently favourably or unfavourably to an object or a class of objects.

The fact that the scope of the term 'attitude' is so wide does not mean that every social researcher would necessarily agree upon the components of attitude (cognitive, affective and conative) proposed by Harding et al (1954). On the contrary, there is some disagreement regarding the inclusion of the three components under the notion of attitude. Enquiries into the notion of attitude were carried out which focussed primarily on the affective component, which was the research component of Fishbein & Ajzen (1975), and Shaw & Wright (1967). Mention should be made of the measurement of the affective component in most of the attitude researches in the domain of second/foreign language learning/ acquisition. However, Cooper and Fishman's research (1977) is one among the very few researches

which investigated the components concerned comprehensively. It was also this disagreement which led other investigators (for example, Rokeach 1972) to turn away from measuring all the components of attitude and to suggest that the relationship between the components is so close that attitude can be revealed by measuring any of them.

A novel and influential approach to foreign/second language learning/acquisition is to study the 'parallelism' which occurs between differences in various attitudinal and motivational characteristics and individual differences in the learning/acquisition outcome. In this connection, it is important to point out here that Macnamara (1973a, 1973b) argued that languages can be learned/ acquired despite negative attitudes towards the communities who speak them and their cultures. A simple and clear example of this case is the replacement of Irish by English despite the Irish people's antipathy to England and the English language. Complementary to this understanding of attitude, Gardner (1985b) came to the conclusion that language is a non-representative aspect of the individual's own cultural heritage, and attitudes towards aspects of the language could still play a significant role in anticipating the learner's/acquirer's success in learning/acquiring it.

As we have already observed, it is difficult to say how influential the attitude factor/variable is. It must, thus, be borne in mind that to relate achievement in a second/foreign language to attitudes is probably a generalization. Nevertheless, it is quite clear that language educators (Stevens, 1977) have fully acknowledged that attitude is the major contributor to success in learning/acquiring a foreign/second language. Moreover, the importance of attitude is demonstrated by research emphases on the types of attitudes involved in second/foreign language acquisition/learning. It has in fact been the concern of language educators to dif-

ferentiate between educational and social attitudes which account for attitudes towards learning/acquiring the foreign/second language, and attitudes towards the language community respectively. However, these two types of attitudes are in no way antithetical; on the contrary, they support each other. These two strands, the educational and the social attitudes, are both of importance to second/ foreign language achievement. It is worth noting, however, that studies of attitude have provided us with the conclusion that second/foreign language achievement is consistently related to educational attitudes, whereas it shows a more variable set of relationships with social attitudes.

4.3.1.1 Factors Influencing Attitude

The context of language learning/acquisition can be regarded as a set of factors that is likely to exercise a powerful influence on the learner's/ acquirer's attitude, and it is therefore necessary to take note of such factors in investigating attitude and analysing second/foreign language achievement. There has been a general awareness for some years of these factors, and several research studies have examined some of the possible relationships. In a plan for research on attitude these factors should be taken into account.

(i) Sex

Sometimes these factors declare themselves very distinctly, at other times they are more difficult to identify. For example, in studying the relationship between sex differences (Burstall, 1975; Gardener and Smythe, 1975; Jones, 1949; 1950), the investigators found a high correlation between gender and attitude. Girls tend to have significantly more positive attitudes than boys towards learning/acquiring a foreign/second language. According to these studies this result confirms the

general view of language achievement, which is that girls are better at languages than boys. The explanation offered is that attitude indirectly affects achievement. But another set of recent researches (for example, Naiman, Frolich, Stern and Todesco, 1978; Hansen, 1981) has not supported the assumption formulated by the earlier researchers. This unexpected finding, thus, could show how cautious one has to be in interpreting the relationship between the positiveness of attitudes of second/foreign language acquirers/learners and the sex factor.

(ii) Geographical Area

The question of the relationship between attitude and the environmental factors, namely the geographical area of the second/foreign language acquirers/learners, has become particularly acute in recent studies on language learning/acquisition. In bilingual Canada, it was discovered by Gragnon (1974), and cited in Gardner (1985b), that French-speaking students who are geographically closer to English-speaking areas have a more positive attitude to learning English than students in the more distant ones. Accordingly, francophone students from New Brunswick province showed more positive attitudes to learning English as a second language than those in Ontario, who also showed a more positive attitude than those in Quebec. Working closely on the basis of Gragnon's finding, Jones (1949) drew attention to the degree of positiveness in the attitude of children learning Welsh as a second language. In general, children with Welsh-speaking parents reflected more positive attitudes towards learning Welsh than those with non-Welsh speaking parents.

(iii) Age

It is not surprising to find that the age factor affects attitudes towards learning/acquiring a foreign/second language. The influence of this factor has been

examined in a number of studies (for example, Gardner and Smythe, 1975a; Jones, 1949; 1950; Jordan, 1941). All these studies have shown that attitudes become less positive with age. Although particular attention has been paid to the relationship between the age factor and attitudes, the causes of such a decrease in the positiveness of attitude remain unclear. However, the immediate powerful reason may be that the educational systems tend to encourage students to be more objective towards different issues as they mature. Hence, it brings about what appears to be a decrease in positive attitude.

(iv) Language Achievement

Some language researchers have tended to approach attitude with the expectation of receiving clear-cut answers to such complex questions. In certain respects, however, the question of the decrease in attitude has been associated with language achievement. The results of both Jones's (1950) and Jordan's (1941) enquiries, for instance, showed that the increase in the level of achievement in the foreign/second language is parallel to the growth of the learners/acquirers and thus, indirectly, may affect their attitudes in a less positive direction. In other words, the authors of these studies saw in these results evidence that older language learners/acquirers, who have more knowledge of the language concerned, tend to assess their achievement more than younger learners/acquirers. As well as with the interest in finding an association between attitudes and achievement, a few attempts have been made to identify general cognitive characteristics which can be assumed to be particularly relevant to foreign/second language learning/acquisition: the individual's intelligence and aptitude. For example, Clement, Gardner and Smythe (1975) and Jones(1950), on the one hand, and Gardner and Smythe (1975), on the other, have indicated respectively that intelligence and aptitude have no influence upon

attitudes; they were referred to as independent cognitive capacities.

(v) Attitudes Towards Target Language Community

Another aspect of the current view of attitude is that it is not a single entity, but a composite of two entities which come into play in foreign/second language learning/acquisition. Language attitude then consists of two constituents as stated by Spolsky (1969:274):

> *"one of the most important attitudinal factors is the attitude of the learner to the language and to its speakers."*

However, prominent studies on attitudes towards the target language community in association with language achievement have manifested variable results. Lambert et al (1963) were among the first language investigators to find that Francophilia appeared to be positively related to language achievement for adults in elementary sections of six-week intensive French summer programmes, but negatively related for those in the advanced sections. Corroborating evidence for the variability of results on the social attitudes and language achievement issue per se was offered in Gardner's study (1966). This enquiry, which investigated the effect of social attitudes in some parts of the United States, shows that attitudes towards the language-speaking community are not in consistence with language achievement. In subsequent years, Jacobsen and Imhoof (1974) offered supportive evidence for the importance of the social attitudes in language achievement. In their study of 600 Protestant missionaries living in Japan, who had at least 2 years of intensive language study, they found that Japanophilia is a recognizable predictor of good speaking proficiency.

(vi) Exposure to the Target language and its Culture

In addition, a number of enquiries on the effects of exposure to the second/foreign language on social attitudes have given questionable results. One of the most notable enquiries is Riestra and Johnson's own attempt (1964) to find out if such a correlation exits. They compared the social attitudes of 63 students who had been studying Spanish for two years with another group of 63 students who had not studied Spanish, but shared sex, age and intelligence variables. The result of this enquiry showed that the students who had studied Spanish had more favourable attitudes towards the Spanish community than those who had not studied it. More recent enquiries (for example, Gardner and Smythe 1975) have shown that students who spent more years learning/acquiring the foreign/second language, had more positive attitudes towards the target language community. This finding reinforces that of an earlier enquiry by Riestra and Johnson (1964). However, here, the evidence is not absolutely conclusive in favour of the issue of exposure to a foreign/second language accompanied by cultural information about that language group.

It is not possible to attribute differences in attitudes primarily to the language course experience. Some studies are particularly illuminating because they show different findings. For example, in one such study the investigator (Hansen, 1981), who examined the social attitudes of international students learning English as a second language in the United States, observed that students who had been there for the shortest period of time showed more positive attitudes than those who had been there longer. Grundy et al (1989) support Hansen's (1981) finding in an investigation of the influence of the exposure to the target language and its culture among international students learning English as a second language in Britain. In

the light of these studies we can conclude that exposure to the target language or its culture does not necessarily lead to more positive social and/or educational attitudes.

Should social attitudes be regarded as independent of the learner's/acquirer's intelligence and language aptitude? The studies of Gardner and Lambert (1959, 1972) and Gardner and Smythe (1975), which explored attitudes towards the other ethnic community in relation to intelligence and language aptitude, have documented that the learner's/acquirer's intelligence and language aptitude are independent of his/her social attitudes towards the target language community. In spite of these advances, some language investigators warn against facile generalizations from attitude data. They have argued that attitudes are not directly observable but may be inferred from the behaviour or statements of the individual. Oller and his associates (Oller and Perkins, 1978a; 1978b; Oller et al 1980; Oller, 1981), who have been aware of this problem, have questioned how indicative the validity measures are of the relationship between attitudes, proficiency and intelligence. The alternative they recommend is to employ measures which are not largely based on self-reported data. There is a real danger therefore that such measures of affective variable:

"may inflate estimates of reliability and validity of those measures substantially and produce spurious relationships with other variables— in particular language proficiency (first and second) and intelligence"
(Oller and Perkins, 1978a:85–86).

4.3.1.2 Relevance of Attitude Factor

In the course of the review of recent studies we have observed that foreign/second

language learning/acquisition can be strongly affected by attitudes towards the target language as well as its community. That is why the role of attitudes is recognized in the present study. Nevertheless, there is no suggestion here that these studies provide definitive way of investigating attitudes which language researchers should necessarily follow. The whole complicated question of the relationship between attitudes and foreign/second language achievement still needs to be answered. It would, therefore, be unreasonable for language achievement research to disregard attitude as an important factor.

The obvious reason for considering the role of attitudes in relation to language achievement is to raise the validity of the findings in the present study. To explore this issue, we measured only the affective component of attitude, emphasising Rokeach's assumption (1972) that sufficient information about attitude can be obtained by measuring any of the three components— cognitive, affective, conative. In principle, attention should be focused on both types of attitudes, educational as well as social, in studying foreign/second language achievement. This, however, does not mean that this assumption gives us a genuine synthesis. It should again be pointed out that the social attitudes, unlike educational attitudes, showed a more variable set of relationships with foreign/second language achievement. In this case, it may not be desirable to attempt to build a conclusion around a number of existing variables. In other words, our research has focussed on the educational type of attitudes, which is consistently related to achievement, as has been mentioned earlier. Nevertheless, it is important not to underestimate what has already been achieved regarding the issue in hand.

4.3.1.3 Results

Let us now look closely at the research results on attitudes as represented by Tables 4.3 and 4.4. A first approach would be one which shows the generalized attitudes (interest in foreign languages) of the populations involved in this study. It would be, then, easy to assess their language specific attitudes (attitudes towards learning English). It can be inferred statistically from the high proportion of those who replied 'agree' on the one hand, and the low proportion of those who replied 'disagree' and 'strongly disagree' on the other to questions about their interest in foreign languages, that they have a great deal of interest in foreign languages as it is shown in Table 4.3.

Population	*Number*	*Agree*	*No Opinion*	*Disagree*	*Strongly Disagree*
Bi/Male	32	92.7	2	4.1	1
Bi/Female	32	94.7	1	4.1	0
Mono1/Male	32	84.3	8.3	7.2	0
Mono1/Female	32	84.3	5.2	7.2	3.1
Mono2/Male	32	79.1	9.3	6.2	5.2
Mono2/Female	32	83.3	6.2	10.4	0

Table 4.3: Interest in Foreign Languages

Not only should we strive to be very clear about exactly what we are examining, it is also important to be aware of any variability that may exist. In other words, there is always a chance that the differences we observe are indeed due to inherent variability. It is therefore possible to proceed in two ways in order to place their interest in foreign languages into learner factors/variables: one is to start out from the gender variable/factor and the other is to start from the linguistic repertoire. The first step is to see how these variables operate on our populations, and

consequently to highlight their significance. We can derive from Figures 4.3a, 4.3b, and 4.3c the assumption that the female group in each population of the present study has an an equal or higher interest in foreign languages to the male groups. Hence, it is noteworthy that the sex factor/variable has a consistent bearing upon their interest in foreign languages.

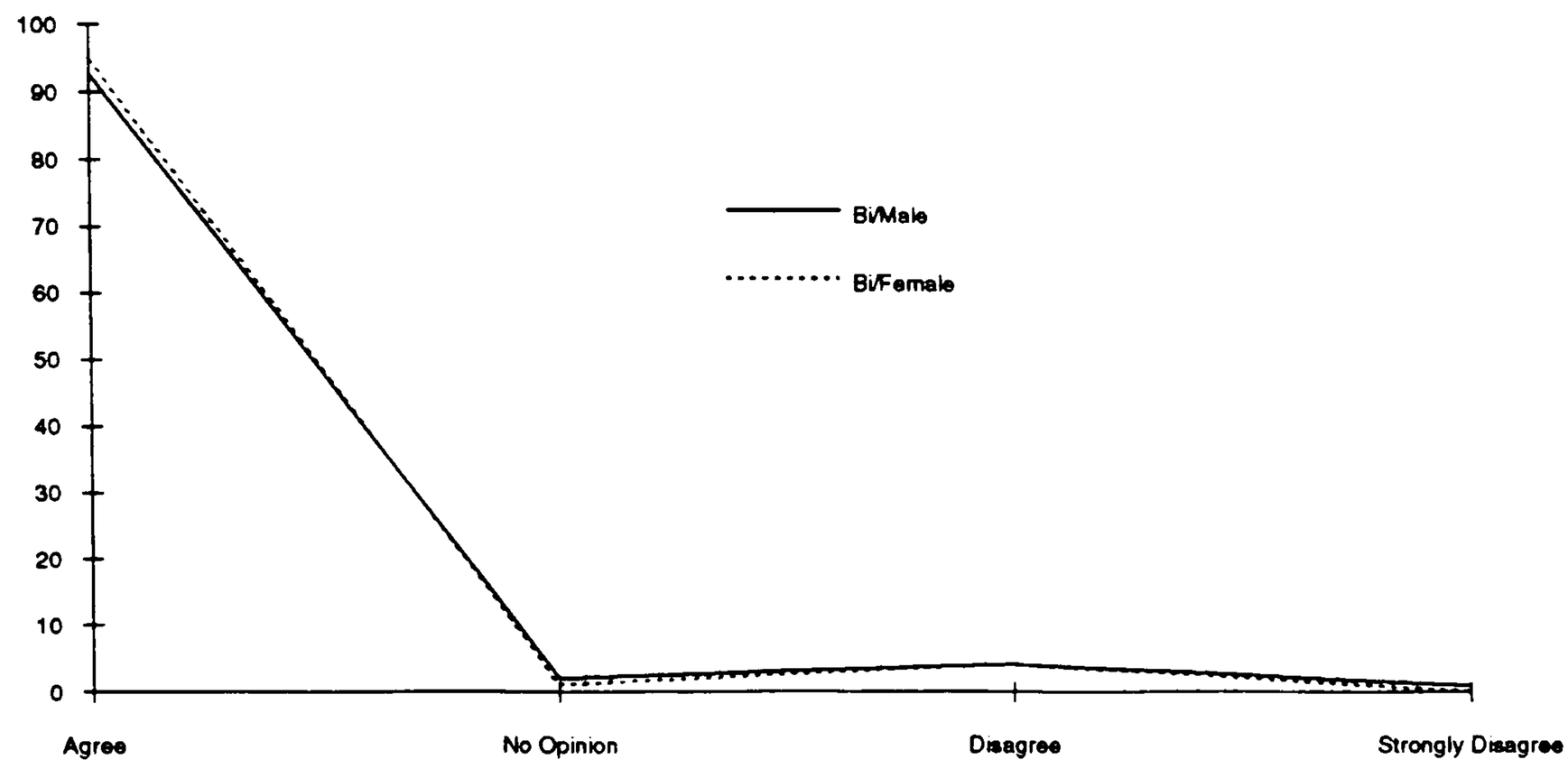


Figure 4.3a: Interest in Foreign Languages

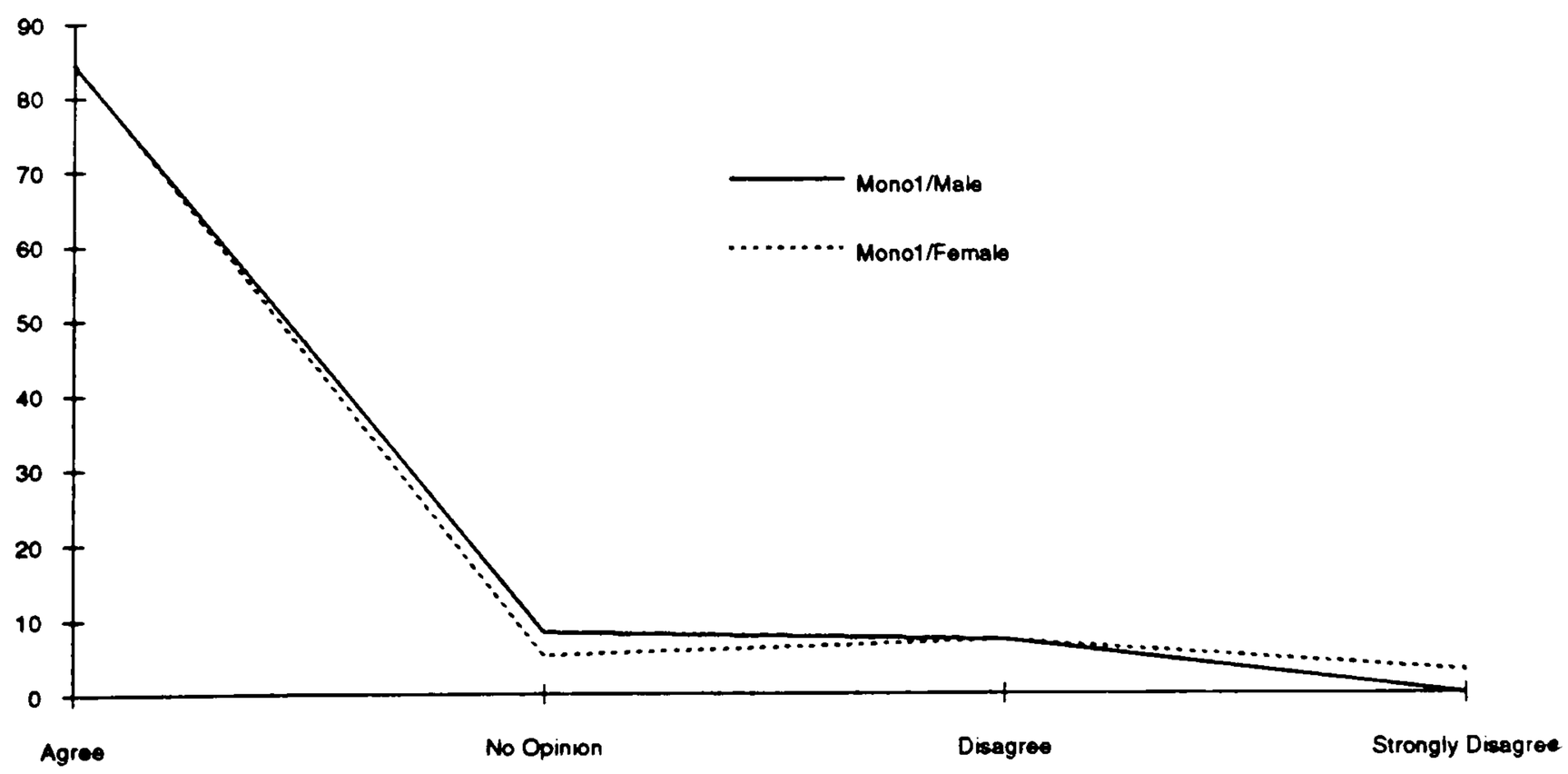


Figure 4.3b: Interest in Foreign Languages

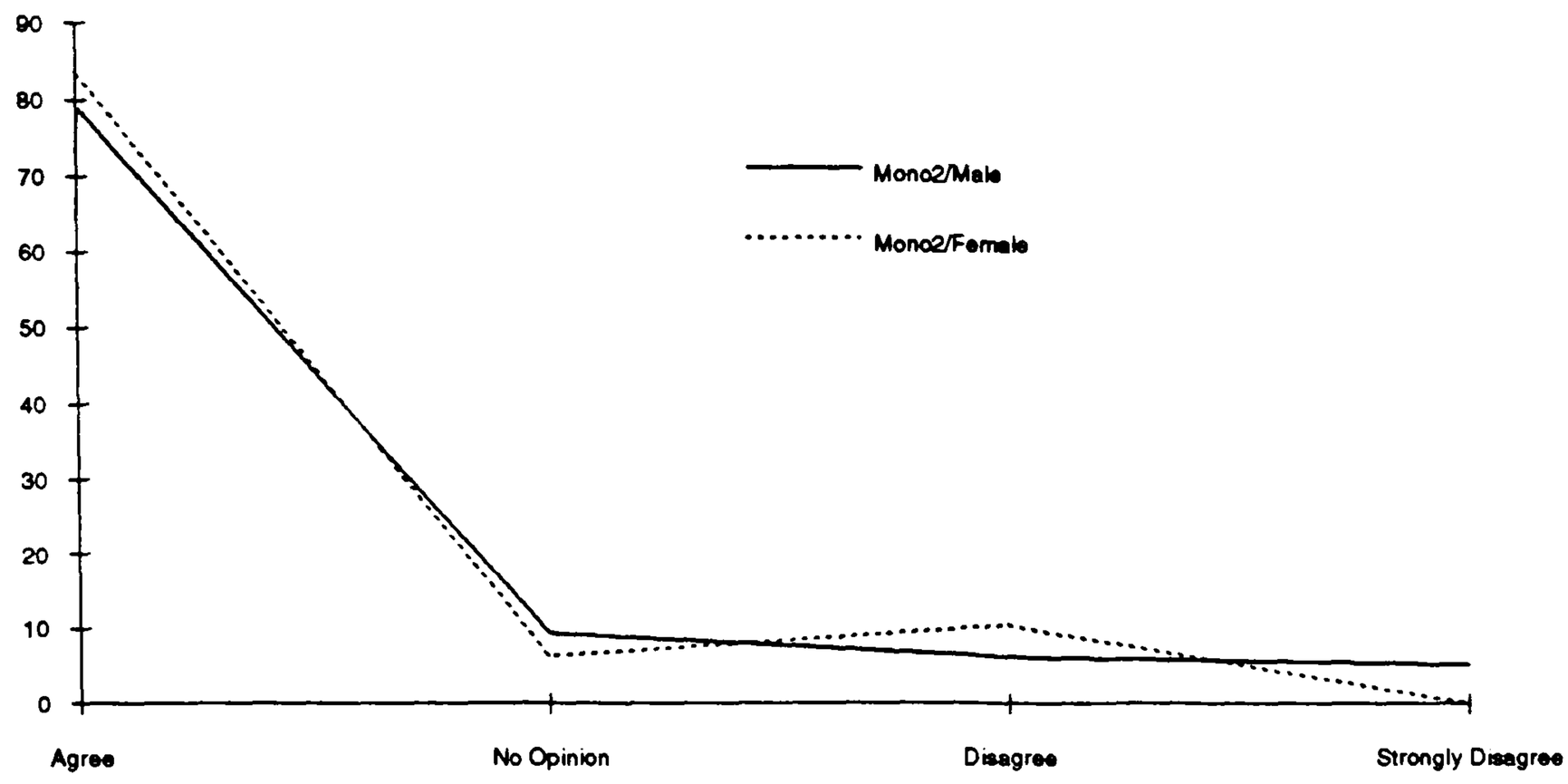


Figure 4.3c: Interest in Foreign Languages

It should be pointed out that from Figures 4.3d and 4.3e, we become conscious of another consistent divergency in the frequency distributions. At one extreme we find that the Bilingual population (males and females) has more interest in foreign languages than the others. And at the other we find that the frequency distributions of the Monolingual 1 and Monolingual 2 populations (males and females) are closer to each other than to the Bilingual population (males and females).

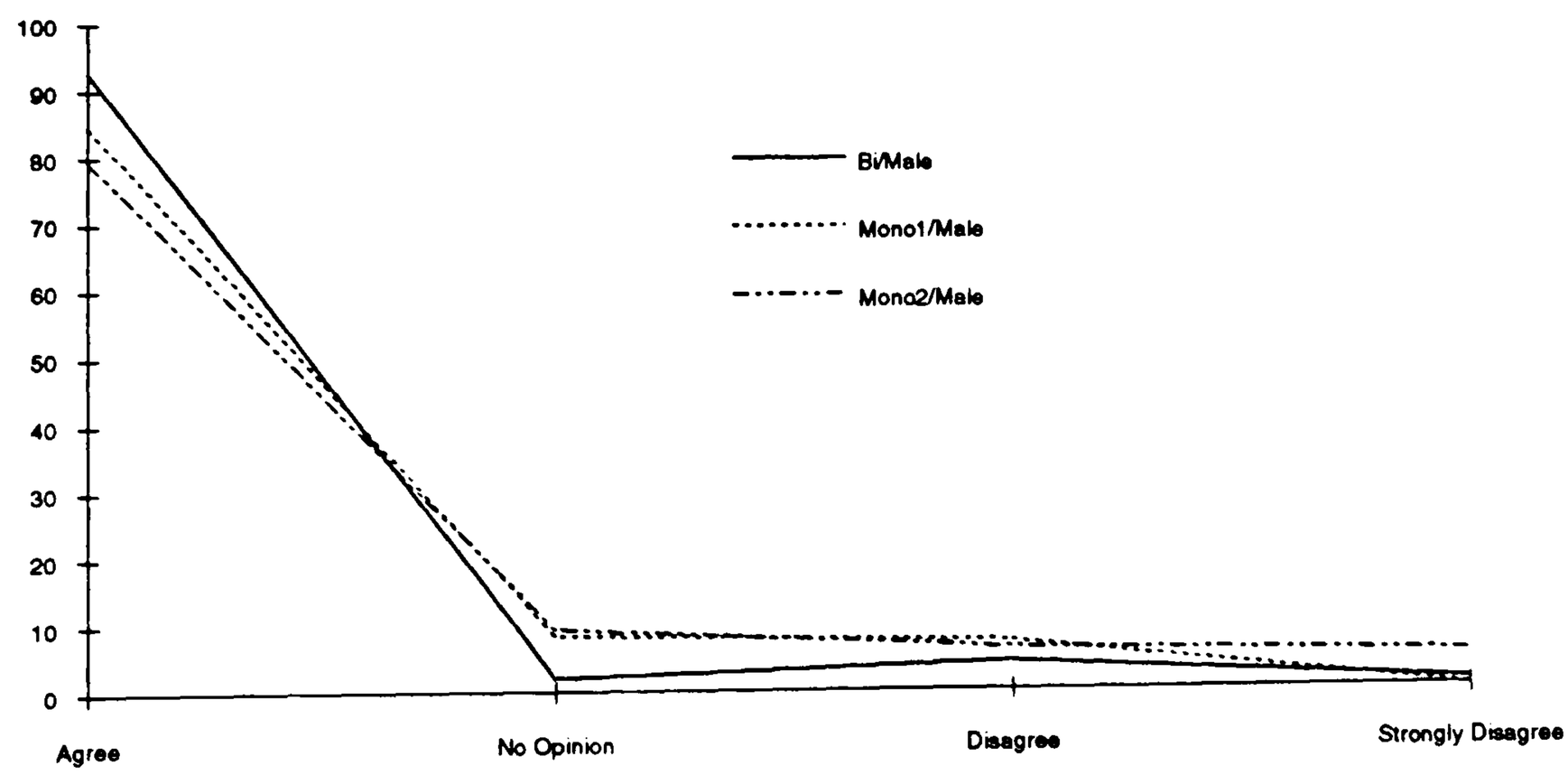


Figure 4.3d: Interest in Foreign Languages

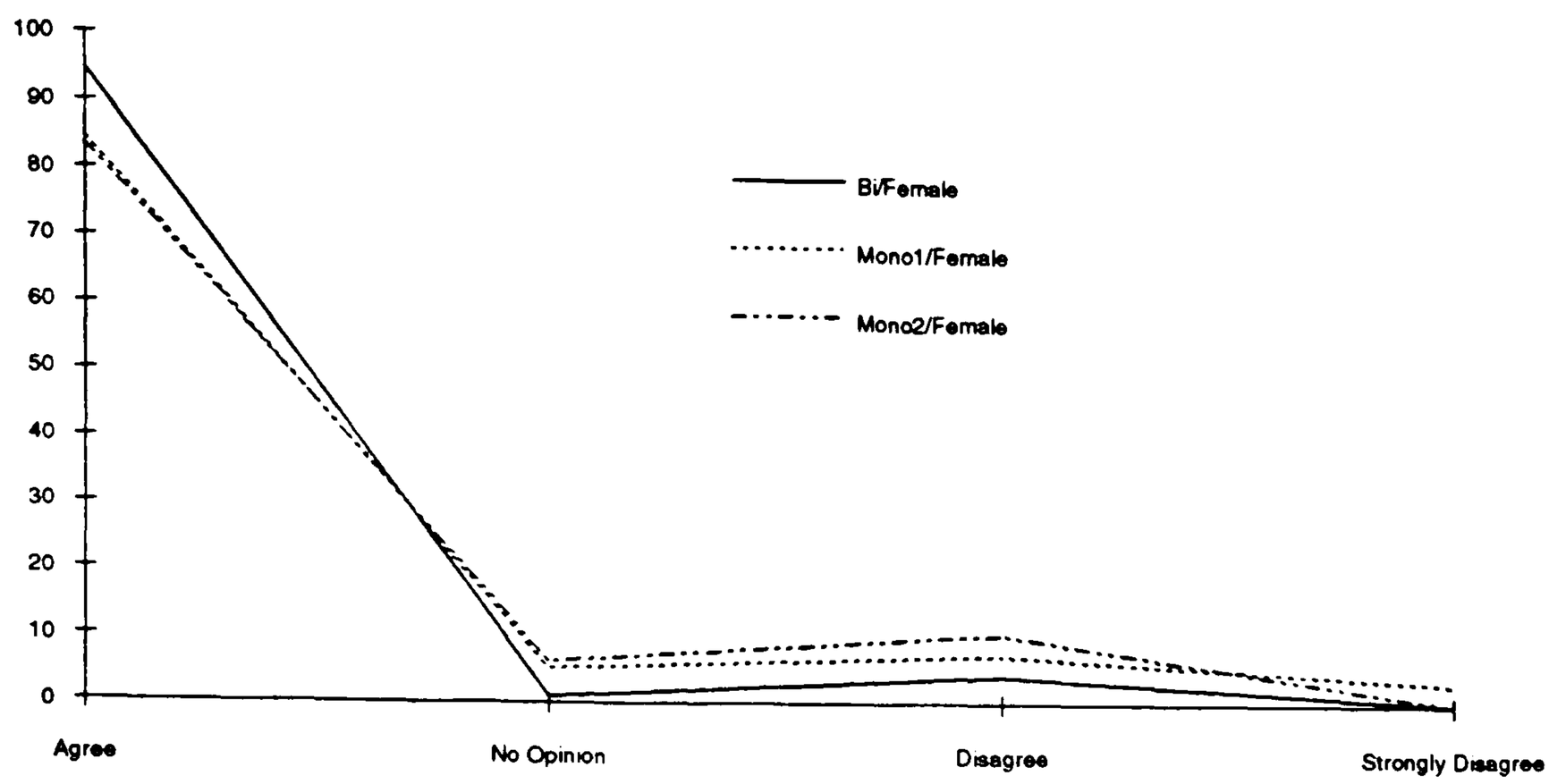


Figure 4.3e: Interest in Foreign Languages

What must be considered in the interpretation of Figures 4.3d and 4.3e are the various determinants which have a bearing on the interviewees' interest in foreign languages. These determinants are linguistic repertoire and exposure to the target language, while it is linguistic repertoire variable which is likely to be influential here. In other words, it is possible to assume that this divergency in the frequency distributions can be attributed to the linguistic repertoire variable which is different in the Bilingual population from the Monolingual 1 and Monolingual 2 ones, i.e: Armenian and Arabic in the former and only Arabic in the latter.

We shall want to go beyond a mere description of the data, because of its importance. One piece of information we shall probably need is the 'significance level' in order to check the reliability of the pieces of evidence in hand from which to decide whether further work may be useful. However, it is important to mention that the 'significance level' can only be calculated using frequencies and cannot be obtained from percentages. So far, we are interested in comparing frequencies in

two populations at a time. In such cases, the non-parametric test known as the 'chi-square' test is especially useful. The 'chi-square' χ^2 test, thus, will enable us to compare the frequencies we observed in their interest in foreign languages.

Let us look at the results given as frequency distributions in Table 4.4. Our procedure will be to compare the frequencies which show consistent divergency. Therefore, we can only compare the grouped data which are presented in the column labelled 'Agree' in Table 4.4.

Population	*Agree*	*No Opinion*	*Disagree*	*Strongly Disagree*
Bi/Male	89	2	4	1
Bi/Female	91	1	4	0
Mono1/Male	81	8	7	0
Mono1/Female	81	5	7	3
Mono2/Male	76	9	6	5
Mono2/Female	80	6	10	0

Table 4.4: Interest in Foreign Languages

We shall now try to find the 'significance level' of the relationship between gender and their interest in foreign languages, despite the apparent association shown earlier in Figures 4.3a; 4.3b; and 4.3c. Here (0.011), (0), and (0,051) are the calculated values of χ^2 for the Bilingual, Monolingual 1, and and Monolingual 2 populations respectively. If our test is at the 5 per cent level, the critical value of χ^2 for one degree of freedom is 3.84, so that the above calculated values are not significant. In other words, we have failed to find sufficient evidence to claim any interaction between gender and their interest in foreign languages. We therefore conclude that we cannot reject the null hypothesis at the 5 per cent level.

In considering the influence of the linguistic repertoire variable/factor of the populations of this study on their interest in foreign languages, as was indicated above by Figures 4.3d and 4.3e, we must proceed in the same way as with the other variable (gender), using the non-parametric test 'chi-square'. However, once more we will look at the possible bearing of the exposure to the target language variable/factor upon their interest in foreign languages 'in its own right'. Referring to Table 4.4 (Agree column), which shows consistent divergency in frequency distributions, we obtain the following χ^2 values by assessing the differences in frequency of exposure to the target language variable/factor:

- Monolingual 1/Male with Monolingual 2/Male χ^2 is 0.079

- Monolingual 1/Female with Monolingual 2/Female χ^2 is 0.003

- Bilingual/Male with Monolingual 2/Male χ^2 is 0.512

- Bilingual/Female with Monolingual 2/Female χ^2 is 0.353

If our test is at the 5 per cent level, the critical value of χ^2 for one degree of freedom is 3.84. We may thus conclude that in this case there is insufficient evidence to claim any interaction between exposure to the target language and interest in foreign languages. With this framework we have also assessed the differences in frequency on the linguistic repertoire variable/factor which exists between the Monolingual 1 and Monolingual 2 populations, on the one hand and the Bilingual one on the other. The following χ^2 values have been obtained:

- Bilingual/Male with Monolingual 1/Male χ^2 is 0.188

- Bilingual/Female with Monolingual 1/Female χ^2 is 0.290

- Bilingual/Male with Monolingual 2/Male χ^2 is 0.512

- Bilingual/Female with Monolingual 2/Female χ^2 is 0.353

The χ^2 values in this case suggest that there is no association between the linguistic repertoire variable/factor and interest in foreign languages if the critical value of χ^2 for one degree of freedom is 3.84 at the 5 per cent level. As a result of this assessment we are led once more to the conclusion that the null hypothesis cannot be rejected.

After this overview of the results of investigating the interviewees' interest in foreign languages (their generalized attitudes) and establishing, first, that they have a great interest in foreign languages, and secondly, that gender, exposure to the target language, and linguistic repertoire variables/factors have no significant impact upon their interest in foreign languages, we can now consider their attitudes towards learning English (language specific attitudes). As can be seen from the statistical contents of Table 4.5 they generally have positive attitudes towards learning English.

	POSITIVE				*NEGATIVE*			
Population	*Agree*	*No Opinion*	*Disagree*	*Strongly Disagree*	*Agree*	*No Opinion*	*Disagree*	*Strongly Disagree*
Bi/Male	82.5	10.6	6.2	0.6	14.8	3.1	28.9	53.1
Bi/Female	92.5	4.3	3.1	0	4.6	10.9	21	63.2
Mono1/Male	86.2	6.8	5.6	1.2	8.5	7	36.7	47.6
Mono1/Female	66.2	14.3	16.8	2.5	23.4	3.1	6.2	67.1
Mono2/Male	59.3	13.7	20	6.8	8.5	6.2	39	46
Mono2/Female	85.6	6.2	5.6	2.5	9.3	17.1	71.8	1.5

Table 4.5: Learners' Attitude Towards Learning English

Furthermore, it appears from the cross-tabulated values, which are also represented graphically by Figures 4.5a; 4.5b; 4.5c; 4.5d; 4.5e; and 4.5f, that positive attitudes are substantially higher than negative ones in each group of every population.

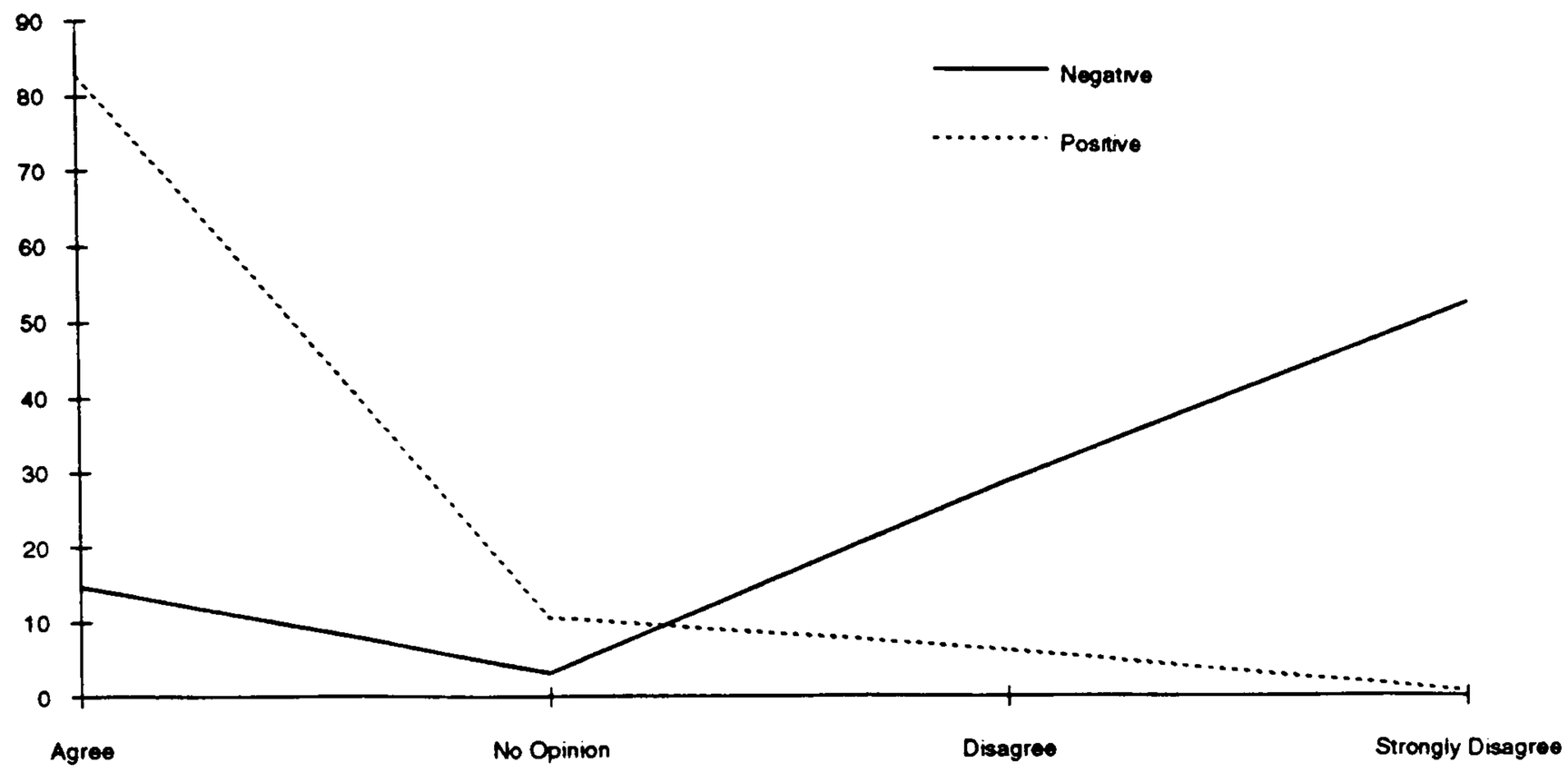


Figure 4.5a: Positive and Negative Attitude Distinction (Bi/Male)

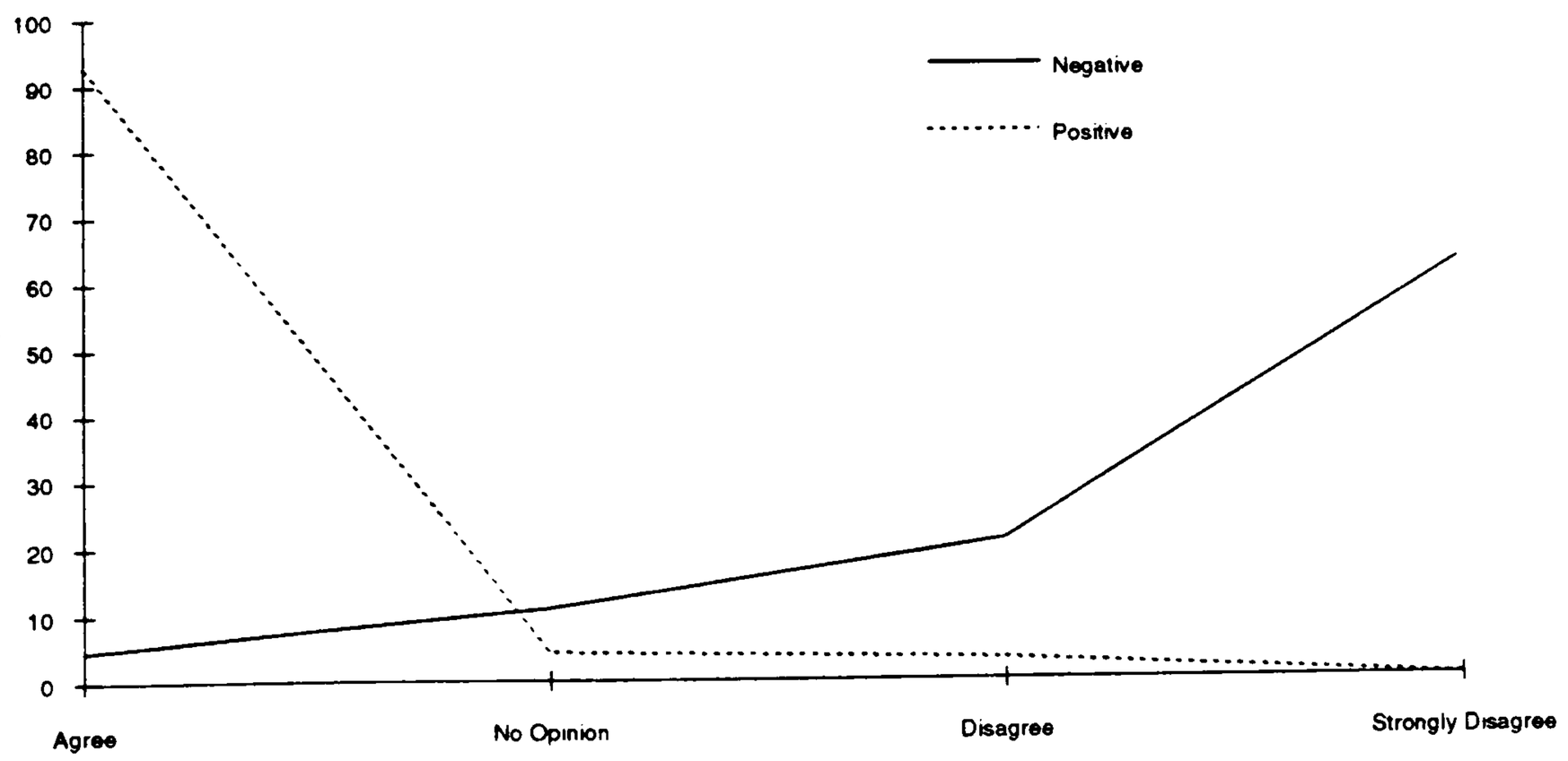


Figure 4.5b: Positive and Negative Attitude Distinction (Bi/Female)

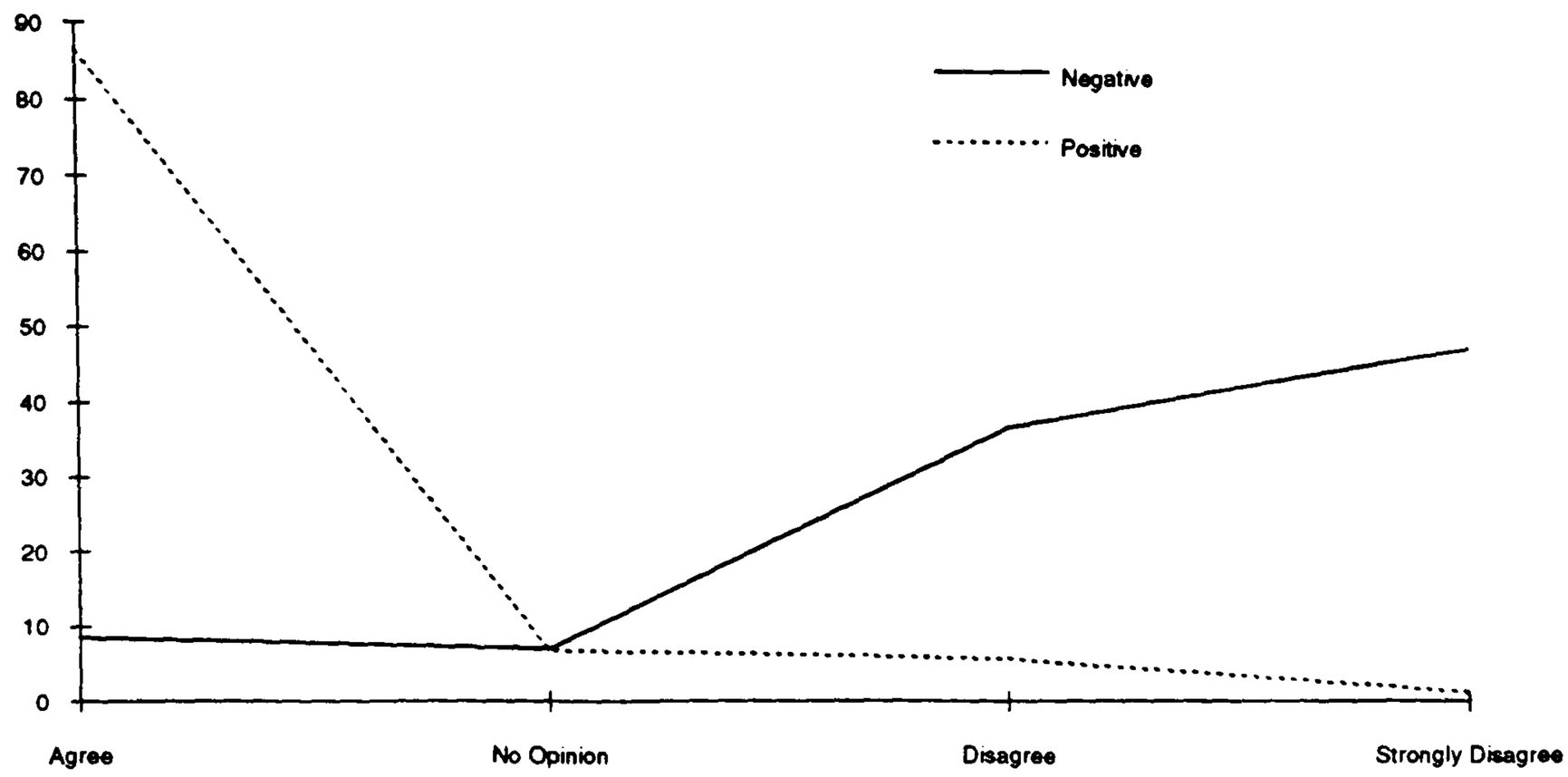


Figure 4.5c: Positive and Negative Attitude Distinction (Mono1/Male)

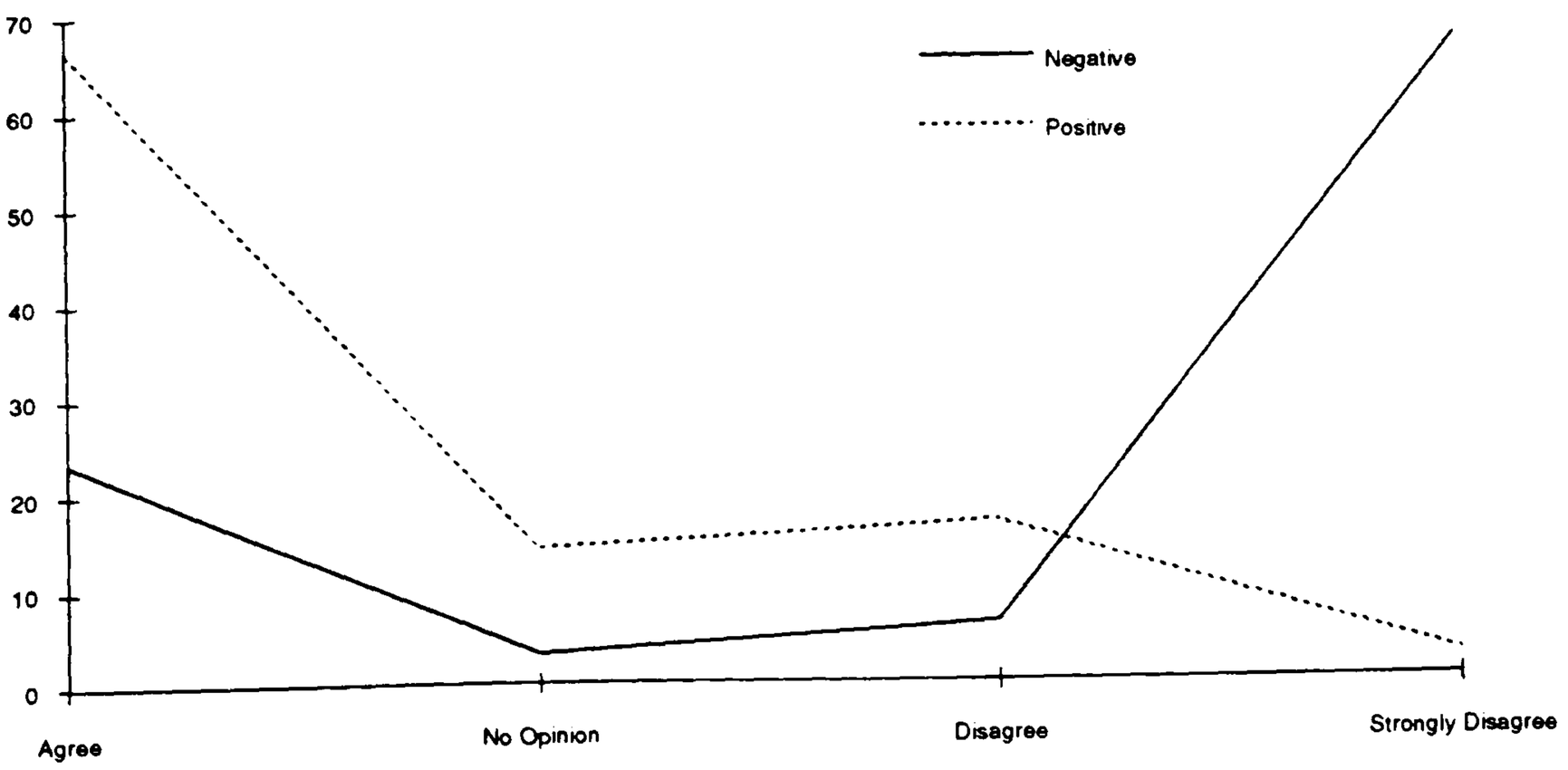


Figure 4.5d: Positive and Negative Attitude Distinction (Mono1/Female)

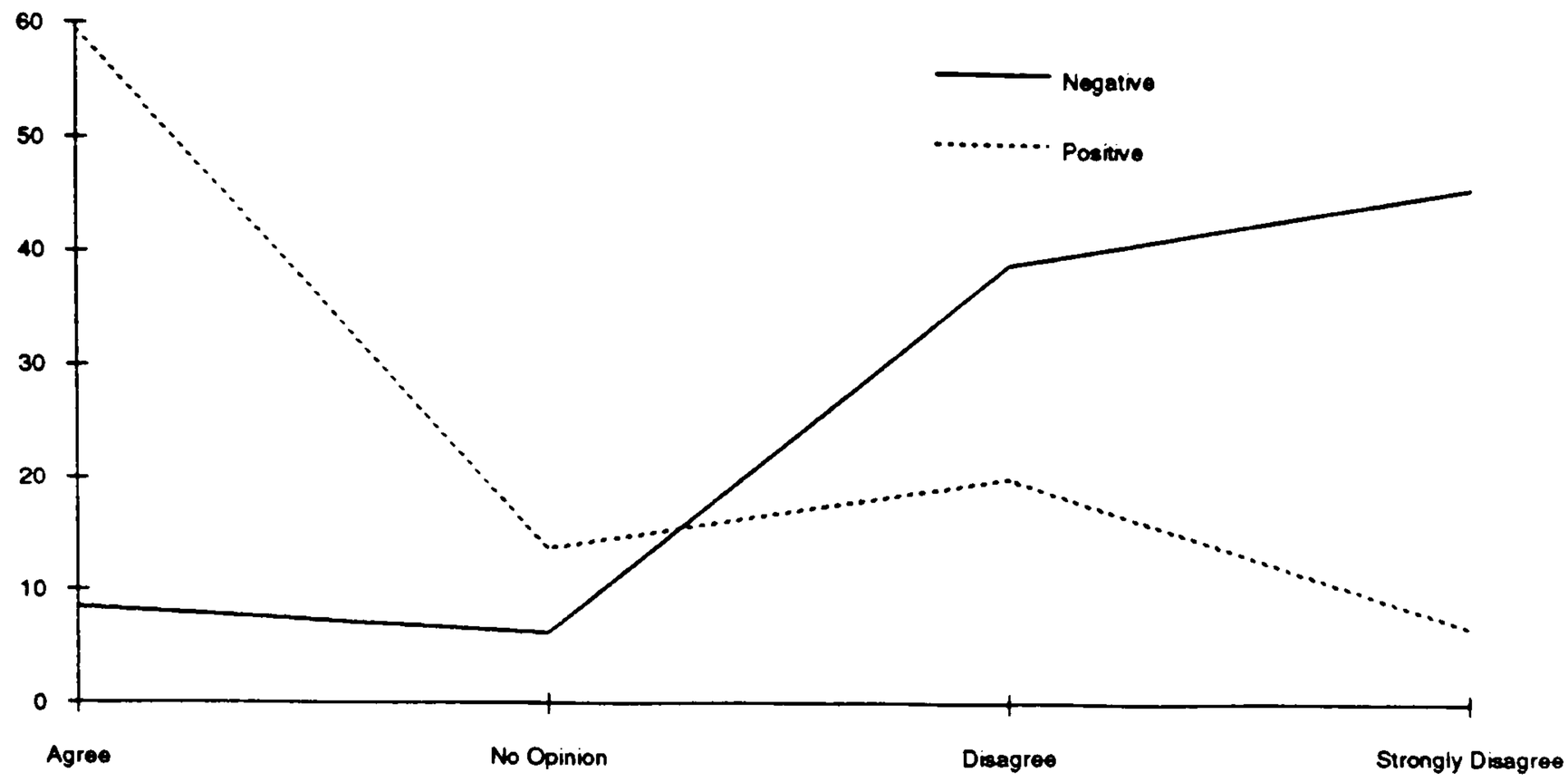


Figure 4.5e: Positive and Negative Attitude Distinction (Mono2/Male)

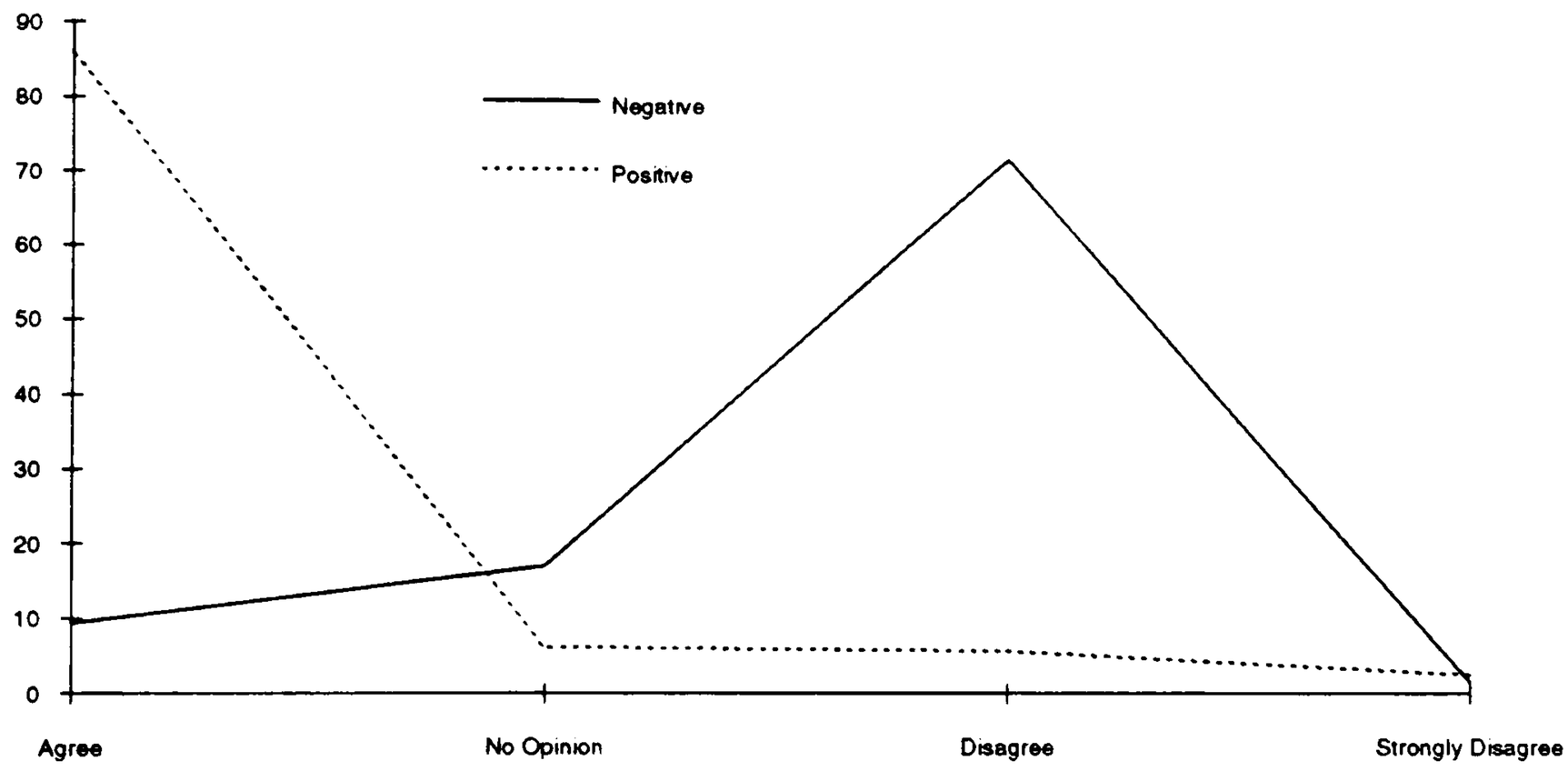
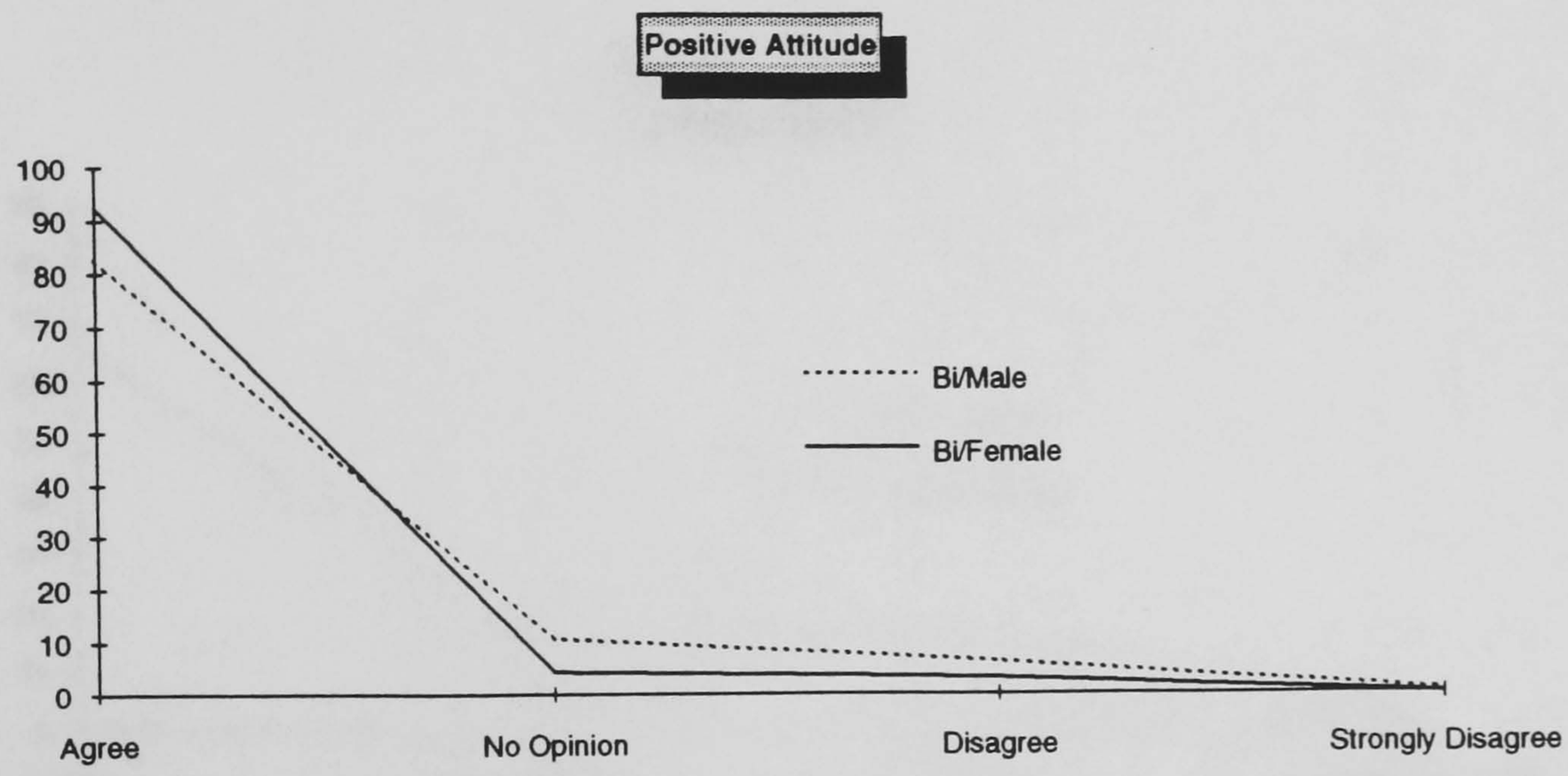


Figure 4.5f: Positive and Negative Attitude Distinction (Mono2/Female)

Comparative analysis of the graphs here first makes it clear that there is a large gap between 'agreeing' on the 'positiveness' and 'negativeness' of attitudes in each

group. Secondly, it highlights the actual balance between the statistical proportion of 'agree' to the positive attitudes and the statistical proportion of 'disagree' and 'strongly disagree' to the negative attitudes towards learning English.

As we have seen earlier, the identification of the sex factor/variable as an important component in interpreting attitudes has become a major focus in language achievement researches. The whole point of paying close attention to the sex factor/variable in the present study is to see whether there is any consistency in its influence upon attitudes. In our research we have observed that our findings regarding the impact of gender on attitudes, represented by Figures 4.5g; 4.5h; and 4.5i, do not confirm the assumption that girls tend to have more positive attitudes than boys towards learning a foreign language.



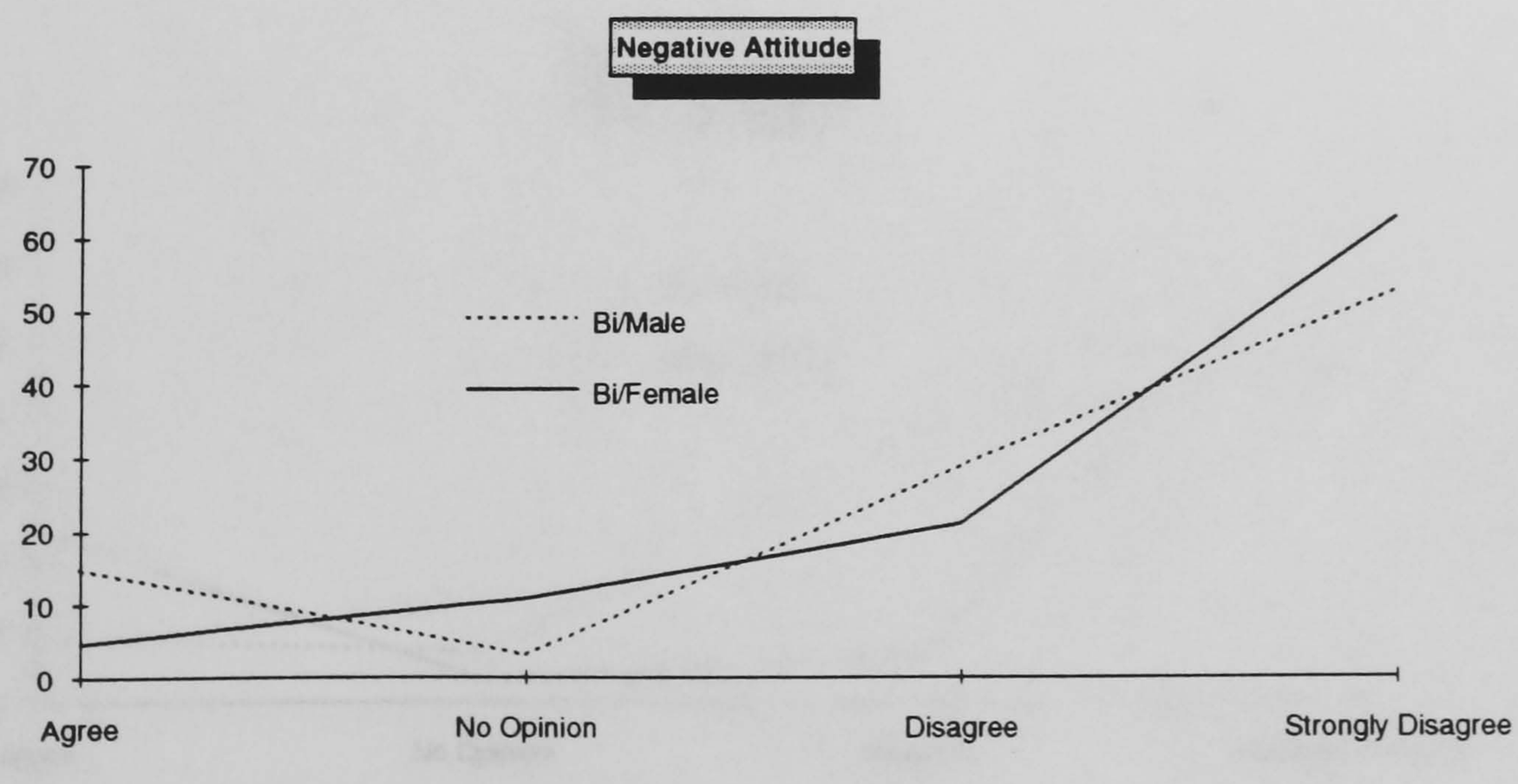
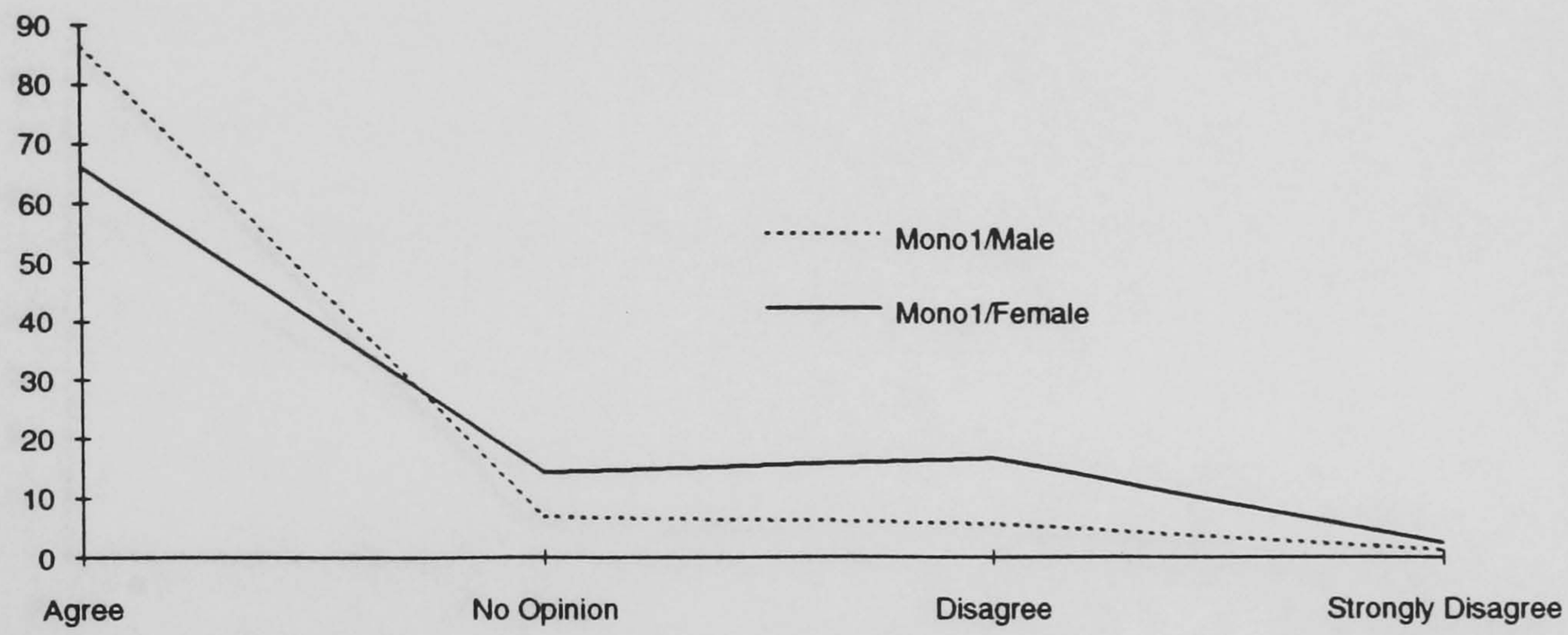


Figure 4.5g: Positive and Negative Attitude Distinction



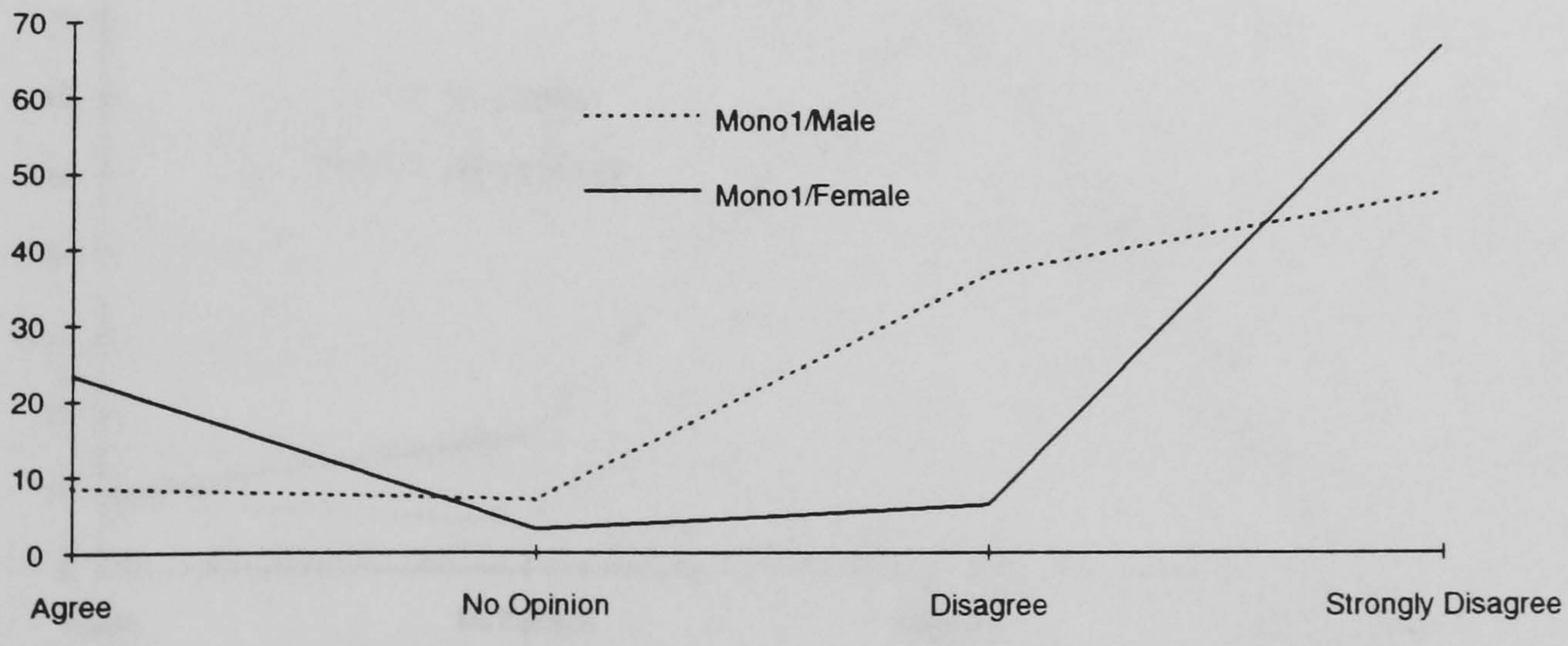
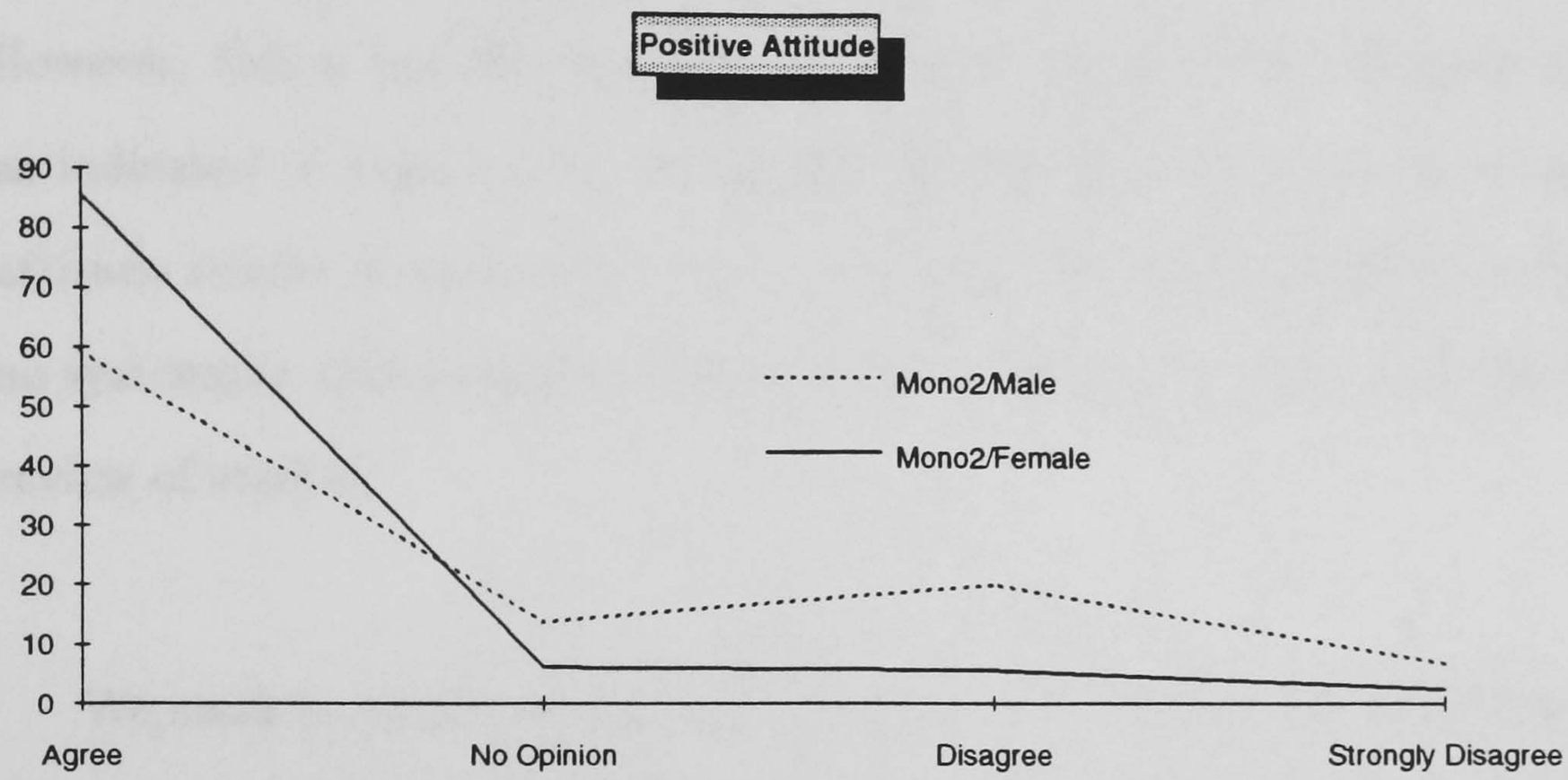


Figure 4.5h: Positive and Negative Attitude Distinction



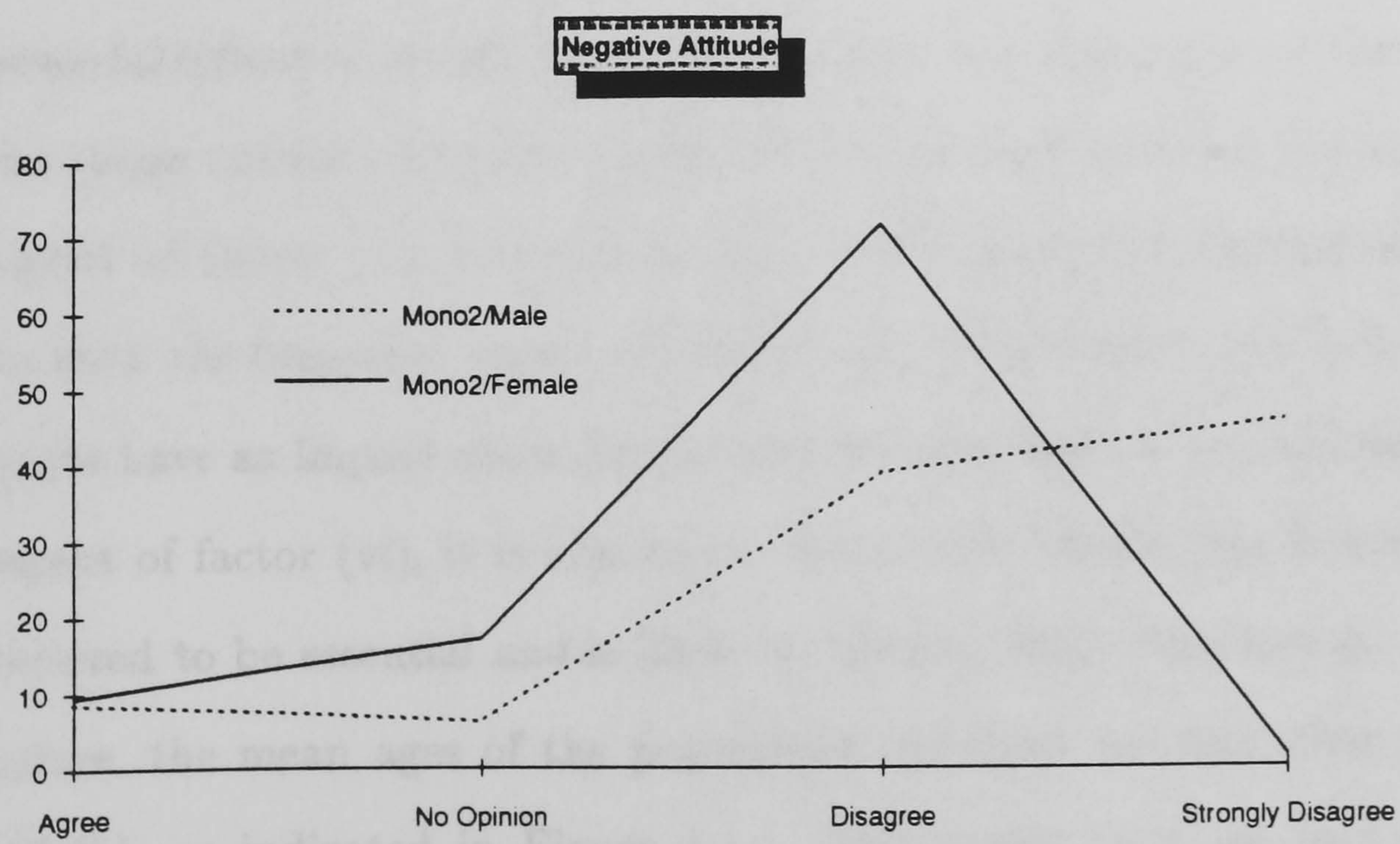
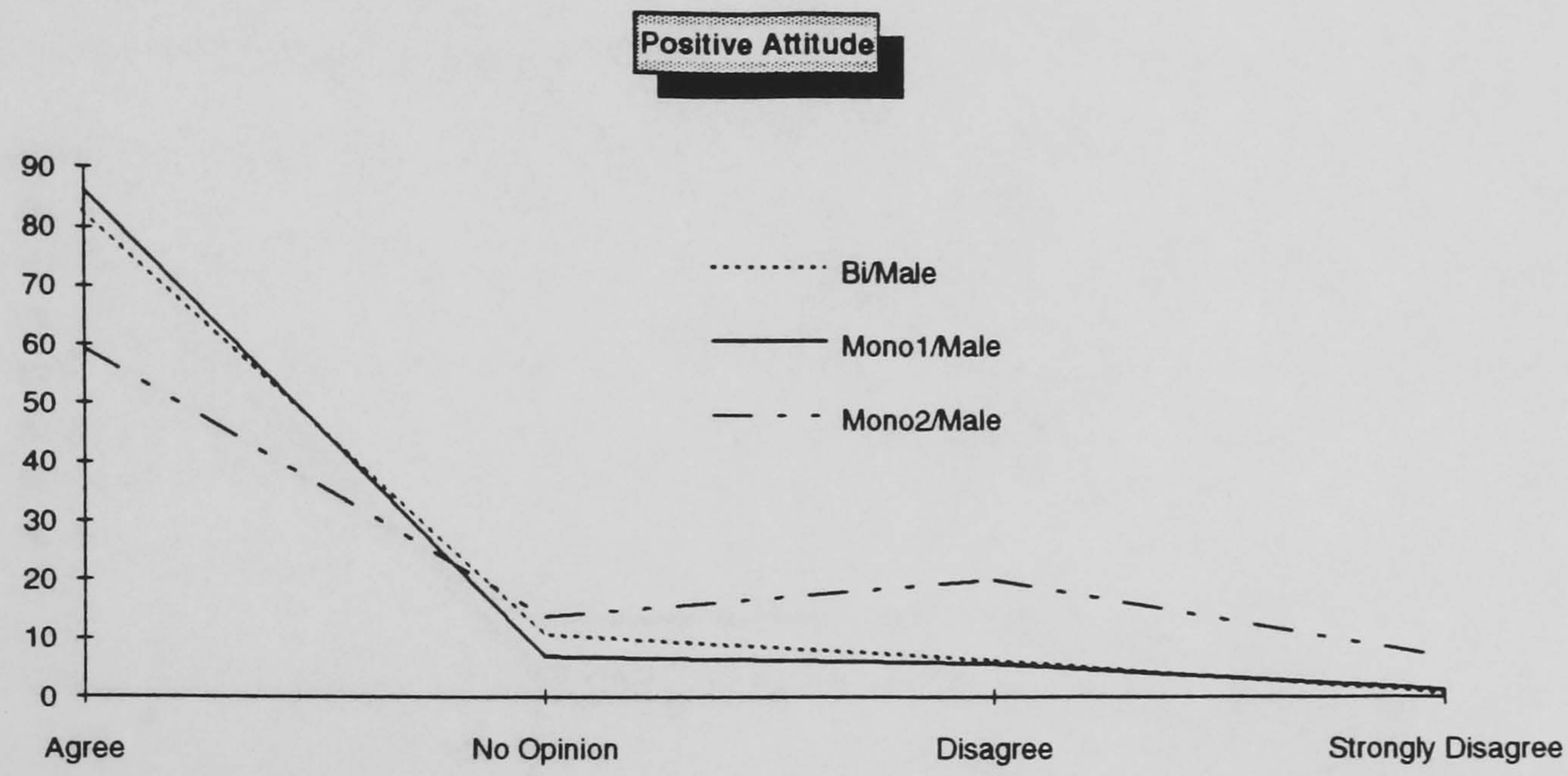


Figure 4.5i: Positive and Negative Attitude Distinction

For example, it is clear from Figure 4.5g that the female group in the Monolingual 1 population has less positive attitudes than the male group— they agreed less on the 'positiveness' and more on the 'negativeness' of foreign language learning. On the other hand, as can easily be seen in Figure 4.5i, the attitudes of the female group in the Monolingual 2 population is significantly more positive than the male one. However, this is not the case with the female group in the bilingual population as indicated in Figure 4.5g. In short, we have made an attempt to look at the attitude results in association with the sex factor. Our contention is that there is no systematic relationship between attitude and gender as has been shown in the review of studies.

We must be equally aware of the influence of other factors which may manifest themselves in different attitudes to learning a foreign language. In pursuing these factors we must remind ourselves that, for the present study, the social attitudes of the populations involved cannot be regarded as a factor that is likely to exercise a powerful influence on language achievement, because there is no direct contact with the target culture. In other words, we are saying that factor (v) and the cultural aspect of factor (vi) have no bearing on the present investigation of attitudes. As such the linguistic aspect of factor (vi)— Exposure to the Target Language— might have an impact upon the educational attitudes. In considering the linguistic aspect of factor (vi), it is also important to identify the age factor (iii), which is believed to be essential and is likely to interact with other factors. As mentioned before, the mean ages of the populations involved are very close to the median (17.95), as indicated in Figure 4.1a. This means that we have to find out in the present study if there is any evidence of a relationship between the educational attitudes and the linguistic aspect of factor (vi), Exposure to the Target Language.

In Table 4.2 (section 4.2.1) we can see that the Monolingual 2 population, of the the populations studied (males and females), has the least exposure to English as a foreign language. This invites us to take a closer look at the values of Table 4.5 comparatively. It is interesting to note that Figures (4.5j; 4.5k) suggest that exposure to the target language factor does not necessarily lead to more positive educational attitudes; the female group in the Monolingual 2 population has more positive and less negative attitudes towards learning English.



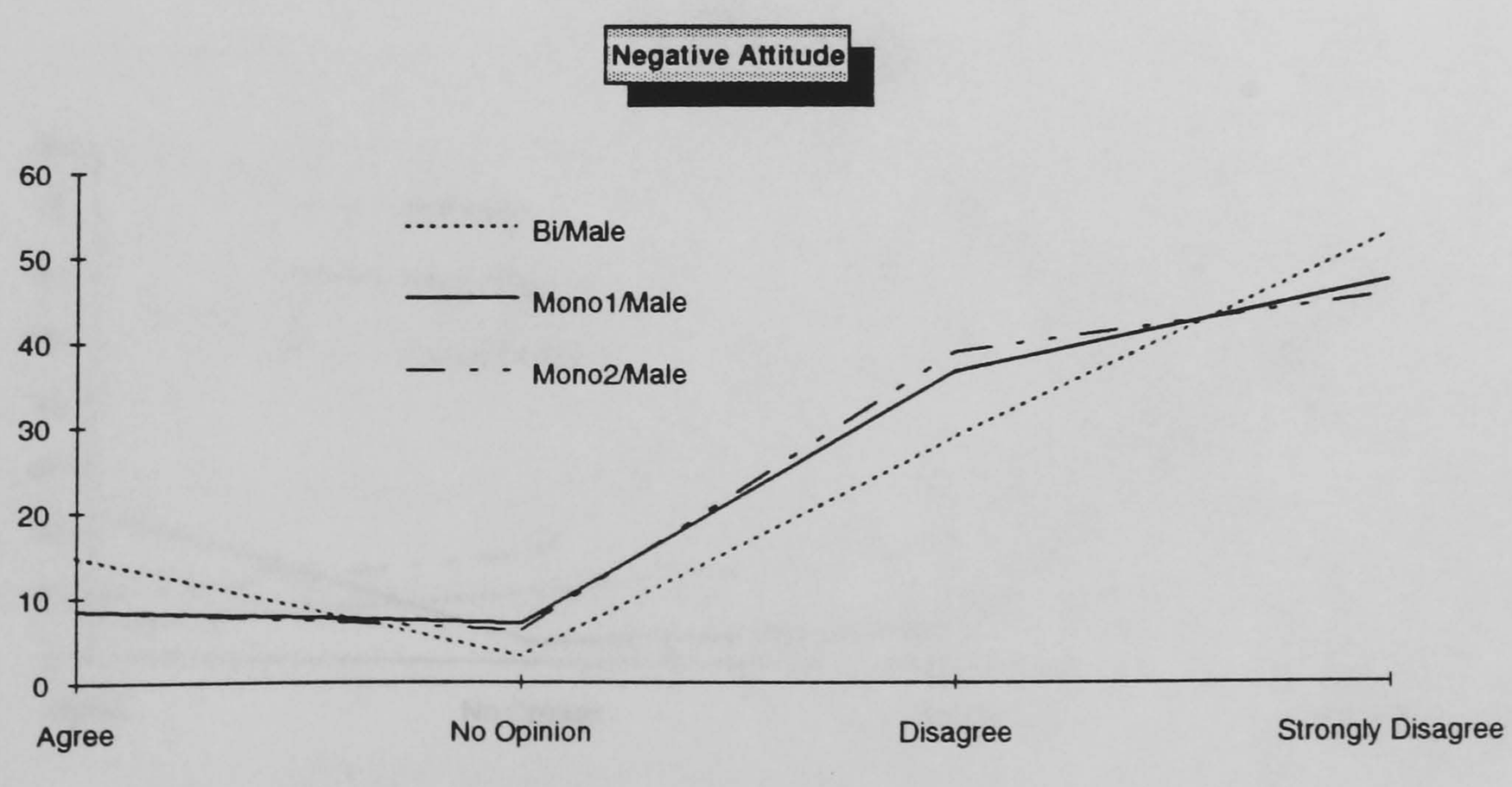
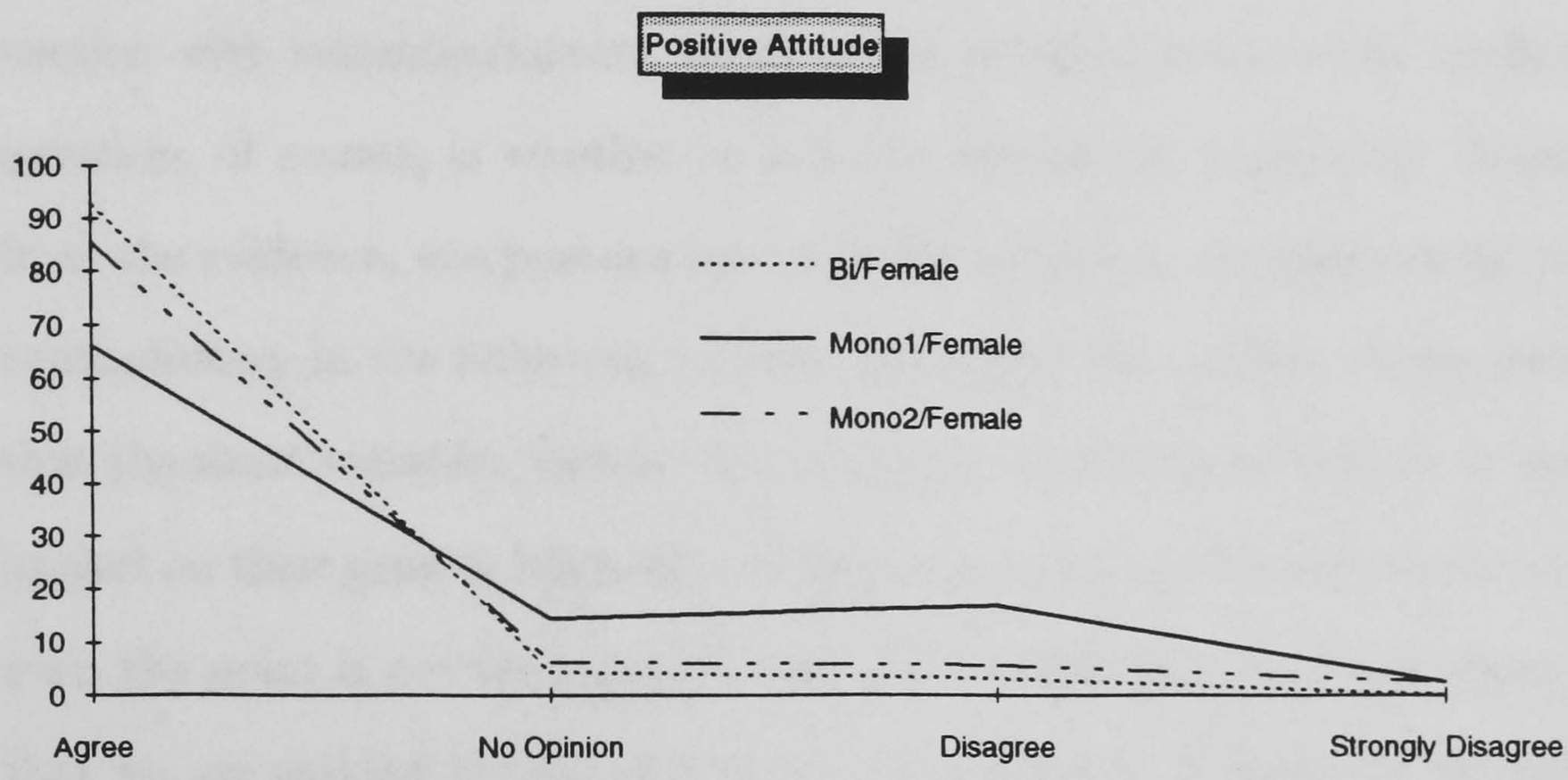


Figure 4.5j: Positive and Negative Attitude Distinction



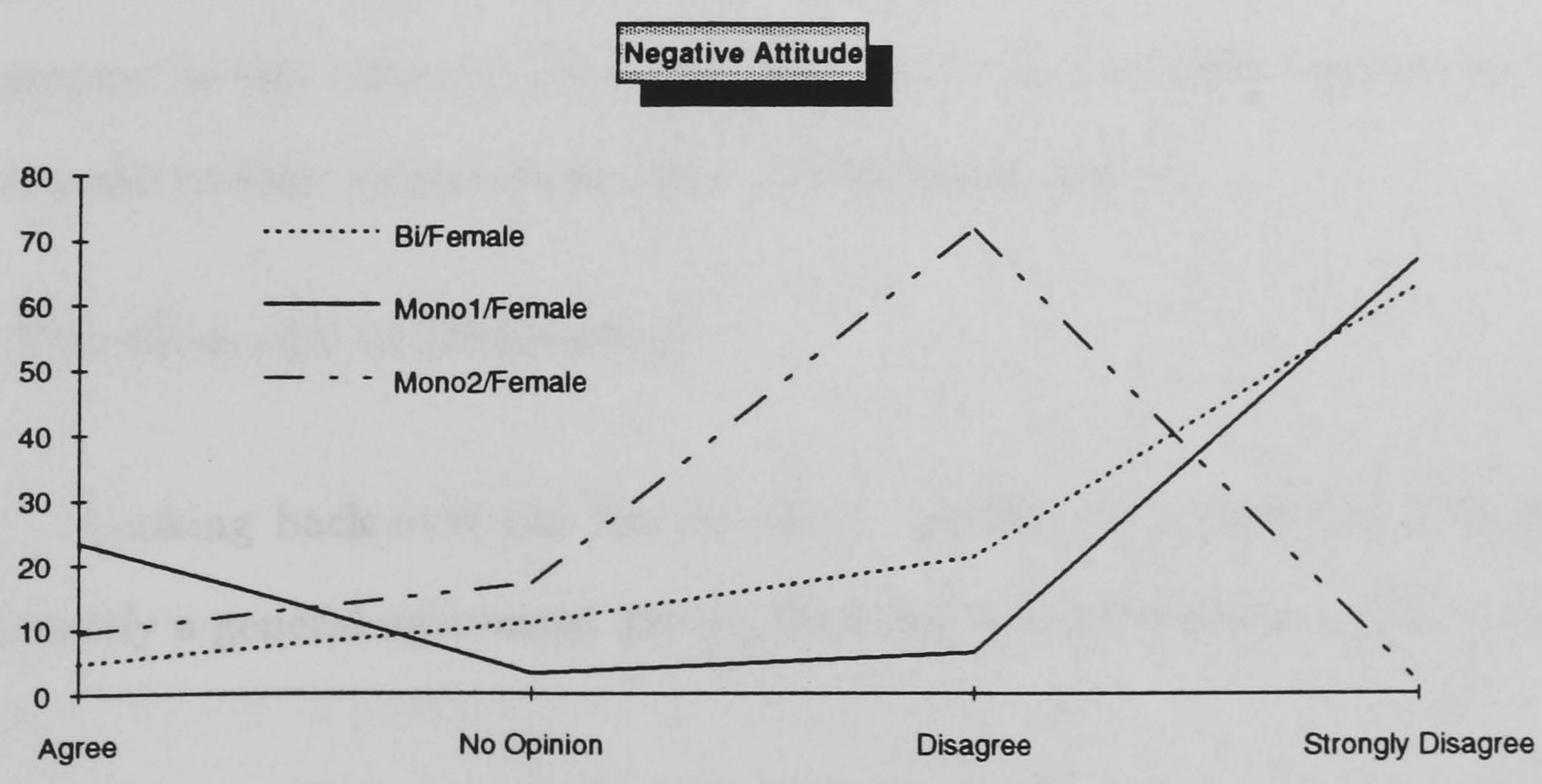


Figure 4.5k: Positive and Negative Attitude Distinction

The main research approach to the issue of attitudes has been to study learners' language generalized and language specific attitudes. Both lines of research have been pursued in order to find clear evidence to support conclusively our aim of raising the validity and reliability of our forthcoming linguistic findings. On the basis of the previous results regarding their general and specific attitudes in connection with variables/factors, much of the evidence seems to be conflicting. The question, of course, is whether in fact the results are conflicting. Standing back from the evidence, one perhaps interpret the results as complementary rather than contradictory in the following manner. An insightful analysis of the results shows that the same variables/factors have shown a consistent as well as an inconsistent impact on their general language and language specific attitudes respectively. However, the point is not that we are looking for consistency in their influence, rather, that we are seeking to understand their significance. Because of the insignificant influence of these variables/factors on their interest in foreign languages on the one hand, and their inconsistent influence on the subjects' interest in learning English on the other, it can be argued that these variables/factors must not be taken into account in this context. This, therefore, gives the linguistic findings which will be considered later in our study their special importance.

4.3.2 The Concept of Motivation

Looking back over the history of the studies on motivation, it is possible to identify a general agreement among theorists and psychologists that motivation is:

"a state of need or desire that activates the person to do something that will satisfy his need or desire"

(Hunter, 1967:4).

In addition to this, aspects have been singled out as indicative of qualities needed for motivation:

> *"motivation involves four aspects, a goal, effortful behaviour, a desire to attain the goal and favourable attitudes toward the activity in question"*
> *(Gardner, 1985b:50).*

What does this imply for the context of foreign/second language learning/ acquisition? Foreign/second language learning/acquisition is also concerned with the four aspects of motivation; motivation, as such, can be viewed as a mixture of effort, desire to learn/acquire and favourable attitudes towards learning/acquiring the language in question. However, this emphasis on attitudes as motivational supports is a shift from the old understanding of the role of attitudes. In fact, it is only recently that the distinctive roles of the motivational factors have been realized. Without this foundation, attitudes and motivation usually have been considered as a cluster of factors responsible for the relative success or failure in foreign/second language learning/acquisition (Els et al 1984). For example, in the earlier literature, the work of Gardner and Lambert (1959;1972) has been concerned with the interdependent responsibility of factors in foreign/second language achievement. In contrast, recent language achievement researches, like Gardner's (1979) and Oller's (1977), have considered the motivational factors to be supportive of motivation rather than having a direct impact upon foreign/second language achievement. It is worth noting that the studies of attitudes and motivation were first undertaken in a basically French-English bilingual setting in Montreal. They were then extended to studies on French-American groups in Maine and Louisiana in the U.S.A., and to language problems in the Philippines.

Several attempts have been made to describe the types of motivation. From a foreign/second language learning/acquisition point of view, this distinction is pivotal because it can reflect the goal/goals associated with language learning/acquisition. Gardner and Lambert (1959), for example, introduced the terminology of orientation and focused on two types of orientations— integrative and instrumental. Other subsequent studies on motivation have laid particular stress on these orientations (see for example, Burstall et al 1974; Clement, Gardner and Smythe, 1977; Gardner and Lambert, 1972; Lukmani, 1972; Oller, Hudson and Liu, 1977; Smythe et al 1972). However, according to Oller, Hudson and Liu (1977), this classification of integrative and instrumental reasons for learning/acquiring a foreign/second language has a common weakness, i.e. a particular reason can often be classified differently depending upon the interpretation afforded by the individual. Lukmani (1972), for instance, has found that the reason for travelling abroad is instrumental, while Burstall et al (1974) have found that it is integrative. Apart from the ambiguity of this classification, there are other studies which have shown some orientations to be relatively stable. One familiar study is Clement and Kruidenier's (1983) investigation of the relationships of 37 reasons in eight samples. What emerged from this study is that there were four orientations common to all samples and five others were in free variation.

In attempting to see the effects of integrative and instrumental motivation on foreign/second language achievement, it is necessary to state the difference between orientation and motivation. We can visualize orientation as an internal system of reasons for learning/acquiring a foreign/second language, whereas motivation has a system of its own with three characteristics: attitudes towards learning/acquiring the language; the desire to learn/acquire the language; and motivational intensity.

This does not mean that these characteristics are necessarily related to any orientation; they may or may not be. In other words, motivation maintains a dual relationship between the motivational characteristics and the orientational reason/reasons. For instance, in considering integrative motivation, we are concerned with the goal/goals of learning/acquiring a foreign/second language, the effort involved in learning/ acquiring it, the desire to learn/acquire it, and favourable attitudes towards the language and its community. Why should the distinction between these two concepts— orientation and motivation— be so important? The main reason is that the emphasis on any type of orientation is not necessarily allied to a degree of motivation in learning/acquiring the foreign/second language. Simultaneously, we must always bear in mind that it is likely, for example, to find learners/acquirers with identical integrative orientation, but who are not identically motivated to learn/acquire a foreign/second language, or vice versa. As a consequence, the association between the types of orientations and the degrees of motivation is not an obligatory one.

We will now turn to some prominent studies to see to what extent motivation is effective in language achievement. Orientation has a direct bearing upon the issue of foreign/second language achievement. It appears, however, to be impossible to prove that a particular type of orientation results in a higher level of motivation than any other. For instance, Gardner and Lambert (1959) demonstrate that there is a positive association between an integrative orientation and a high motivation, whereas the study of Chihara and Oller (1978) has called into question the finding of Gardner and Lambert (1959). They found that the effects of an integrative motivation are likely to be less distinctive in situations where foreign/second language learners/acquirers have few opportunities for language intake outside classroom.

Another way in which their findings have differed is that they found a weak relationship between attitude and proficiency in English language learners/acquirers in Japan. Nothing has had greater attention about the effects of an integrative motivation than the studies of Lukmani (1972), Gardner and Lambert (1972) and Gardner and Santos (1970). In Lukmani's study (1972), the instrumental orientation for learning the target language is correlated more highly with English proficiency than the integrative orientation. Furthermore, we find that the results of the Philippines studies of Gardner and Lambert (1972) and Gardner and Santos (1970) harmonize with Lukmani's (1972). Both recognize that there is a positive association between learning outcomes and an instrumental orientation.

Together with the interest in discovering foreign/second language achievement in association with motivational orientations, a few attempts have been made to identify the social milieu which is assumed to be particularly relevant to the learners' motivational orientations. To explain the influence of the social milieu upon the learners' motivational orientations, Gardner (1979) and Lambert (1975) have suggested that 'additive' learning situations may create an integrative orientation towards learning. This means that the tendency is to view one's own community language as superior, and to believe that the addition of a foreign/second language to one's repertoire of languages will not result in first-language proficiency. Nevertheless, they have pointed out that the instrumental orientation can be related to 'subtractive' language learning situations. This suggests that the prestigious social status of the foreign/second language is likely to influence motivation and, in turn, replace the inferior first language. However, in other studies on motivation in relation to social context (Clement, 1979; Taylor et al 1977) instrumental motivation is accompanied by a negative motivational orientation characterized by

'fear of assimilation'. Under these circumstances, then, Giles et al (1977) believe that foreign/second language learners/acquirers will fulfil only the instrumental needs and that, as such, they will maintain their 'psychological distinctiveness'.

What, then, is the current picture of motivation, attitude, and social context? There is general agreement that the relationships between them are more complex than has been suggested earlier. Gardner (1979), for example, believes that economic and political factors can play important roles in determining the type of motivation and its degree of influence upon foreign/second language learning/acquisition.

4.3.2.1 Relvance of Motivation Factor

From the overview of the concept of motivation (4.3.2) earlier in this chapter, it is evident that motivation profoundly influences foreign/second language achievement, and it is now necessary to assess its relevance to this study. Although there is little doubt that the motivational aspect (integrative and instrumental) of affective and personality factors is important, assessing the integrative motivation of the populations of this study remains an issue which is very much open to questions. Therefore, in attempting to link the subjects' language achievement to their motivational orientations, we shall look at their instrumental motivation towards learning English as a foreign language.

If we review the systematic investigations of the factor of motivation in foreign/second language learning/acquisition, we will see that researchers have first started from bilingual contexts distinguishing between integrative and instrumental motivations. These have been derived largely from post-war studies on social attitudes towards ethnic, religious and language groups. Researchers then focused

on settings with language problems, such as the Philippines. We can at this point clarify in what way the terms 'second language' and 'foreign language' can be helpful to the discussion of the concept of motivation. Generally, the terms 'foreign language' and 'second language' are used synonymously, but in more technical discussions the use of these terms has been modified. It must be stressed that we cannot afford to ignore the justification underlying the distinction between 'second' and 'foreign'. Indeed, it is important to know that this distinction was recognized after World War II in international organizations, such as UNESCO. The reason for this was the need to take account of nationalist susceptibilities in discussions of language questions.

However, in the matter of contrasting 'second' and 'foreign' languages there is now consensus that:

- a 'second' language usually has official status within a country which a 'foreign' language has not;

- a 'second' language is frequently a recognized language for its *"full participation in the political and economic life of the nation" (Paulston 1974:12-13)* which a 'foreign' language is not;

- a 'second' language can be needed for education within a country whereas a 'foreign' language can fulfil a variety of purposes: travelling abroad, communicating with native speakers or reading foreign literature;

- a 'second' language usually gets more environmental support than a 'foreign' language where the speech community can be thousands of miles away.

In general, then, a 'second' language has legal status within the national bound-

aries.

Having established this distinction, we are now in a position to conclude that English has been considered explicitly and implicitly a 'second' language in the prominent studies on motivation. In that case we must be prepared to accept that attempts to investigate comparatively integrative and instrumental motivations are justifiable. In other words, it is true to say that it is justifiable in contexts where English has legal status. However, to what extent is this true in this research? In this study, to tackle the issue of the integrative motivation implies no value judgement about affective and personality factors which can ultimately influence the learning outcome. It is, however, worth remembering that this argument does not invalidate the concept of distinguishing between integrative and instrumental motivations altogether. Like most psychometric devices, the motivational tests have been developed to meet the practical requirements of language researches in specific contexts. Their value lies in their capacity to make predictions as accurately as possible.

From our point of view, it would be valid, on the face of it, to assess the integrative motivation of the populations of this research. Assessment of the integrative motivation appears to be inapplicable in relation to the status of the English language in Syria. If we now focus on the characteristics of English in the context of the research in question, we can identify four features: (1) English has no official status; (2) English does not participate in the political and economic life of Syria; (3) English is not needed for education; and (4) English is not supported by the environment and as such requires formal instruction. From all these features we can conclude that English fails to maintain the characteristics of a 'second' language in Syria. In our view, these features are the basic ones necessary to define a 'for-

eign' language. Needless to say that in contrasting 'second' and 'foreign' languages there is consensus that the purposes of second language learning/acquisition are often different from those of foreign language learning. However, this distinction should be employed with reservations and be respected whenever it is important to do so. We cannot, however, wait for research to provide us with definite answers regarding the distinction concerned. We are prepared now to make the assumption that the assessment of the integrative motivation of foreign language learners may give misleading results.

4.3.2.2 Results

The populations of this study have, on the one hand, a strong interest in learning foreign languages, and on the other, positive attitudes towards English, as indicated respectively by Tables 4.3 and 4.5 in (4.3.1.3). This issue is specifically helpful to our enquiry because these characteristics help to establish the motivational system, as was pointed out in (4.3.2)— namely, attitudes towards learning/acquiring a foreign/second language and a desire to learn/acquire the given language. At present, if we want to look at the instrumental motivation of the populations, it seems reasonable to consider the motivational intensity as well, which is the third characteristic of the motivational system. In other words, these characteristics can serve as criteria by which to assess the instrumental motivation as an empirical 'fact', i.e. the actual affective factor of the learners involved in this study. Once the factor of the instrumental motivation has been established it can be related to the other factors/variables in the present study. It is therefore an important step in the present study of foreign language learning outcomes.

Let us now consider the motivational intensity which is the concept behind

the motivational indices introduced by Gardner (1975). In spite of the fact that the motivational indices have been developed with reference to French as a second language, they are not specified to particular languages. As can be seen from Table 4.6, the motivational intensity of the language learners involved in this study is high: the values of this table show a tendency to choose 'important' and 'very important' in answering the question regarding the importance of speaking good English. In other words, what is important for the interpretation of the values of Table 4.6 is the 'positiveness' as well as the 'uniformity' of the results; characteristics which are to be taken into consideration when investigating instrumental motivation.

Population	*Number*	*Not Important*	*No Opinion*	*Important*	*Very Important*
Bi/Male	32	0	0	25	75
Bi/Female	32	0	0	15.6	84.3
Mono1/Male	32	6.2	0	9.3	84.3
Mono1/Female	32	0	0	3.1	96.8
Mono2/Male	32	0	0	21.8	78.1
Mono2/Female	32	3.1	6.2	28.1	62.5

Table 4.6: Motivational Index (Motivational Intensity)

In attempting to link the motivational intensity with the gender and the linguistic repertoire of the learners, it may be observed that the study provides no evidence that the variables concerned are influential. In short, the interviewees' motivational intensity is not affected by their gender and linguistic repertoire. As a consequence, these two variables should not be regarded as influential variables

in interpreting their motivational intensity which could have had some bearing on their instrumental motivation.

We are here at the threshold of another enquiry. Ultimately, we will be looking at the instrumental motivation of the learners of English in the present study and its interaction with gender and linguistic repertoire variables. Although we have attempted earlier to find out the impact of gender and linguistic background in a certain context, it has never been suggested anywhere that they could be answered once and for all with any sense of finality. Rather, they are the kinds of variables one has to take into consideration again and again if we wish to raise the validity of the data (the learning outcome) and avoid unreliability. Our object is thus to arrive at a coherent view of the affective and personality factors of the language learners of this study; these factors make up the alleged variables which we have referred to earlier in this chapter and which can potentially affect the attainment level of foreign language learners.

As can be seen, Table 4.7 demonstrates primarily that the populations involved in this study have a high instrumental motivation. For example, when we refer to the frequencies of Table 4.7, we find that there is significant evidence of a positive association between the large frequencies and two of the given categorized answers regarding the reasons underlying their learning of English: 'Important' and 'Very important'. However, we can confirm this by comparing the frequencies of the categories 'Important' and 'Very Important' with 'Not Important' and 'No Opinion'. This comparison shows a significant difference between the two sets of frequencies. We can, thus, observe a small degree of unacceptability (Not Important) and unawareness (No Opinion) of the instrumental reasons for learning English in comparison with the frequencies of 'Important' and 'Very Important'.

Population	Number	Not Important	No Opinion	Important	Very Important
Bi/male	32	18.3	1.7	39.2	40.6
Bi/Female	32	14.2	1.3	35.7	48.6
Mono1/Male	32	14.2	4.4	37	44.1
Mono1/Female	32	16.9	8	27.6	47.3
Mono2/Male	32	9.8	4	22.3	63.8
Mono2/Female	32	15.1	7.5	29	48.2

Table 4.7: The Instrumental Motivation

We can extend the general argument of instrumental motivation to cover the variables of gender and linguistic repertoire. An alternative way of presenting grouped data is to do so graphically. It would, therefore, be easier to obtain a clearer idea of the frequency distributions of Table 4.7 by graphical representations. When turning to the question of gender in relation to the instrumental motivation in the present study, it is necessary to state that Figures 4.7a; 4.7b; and 4.7c can provide an indication of an unstable impact of gender on instrumental motivation. Note that the graphs 4.7a and 4.7b show a higher instrumental motivation in the Bilingual and Monolingual 1 female populations than in the male ones.

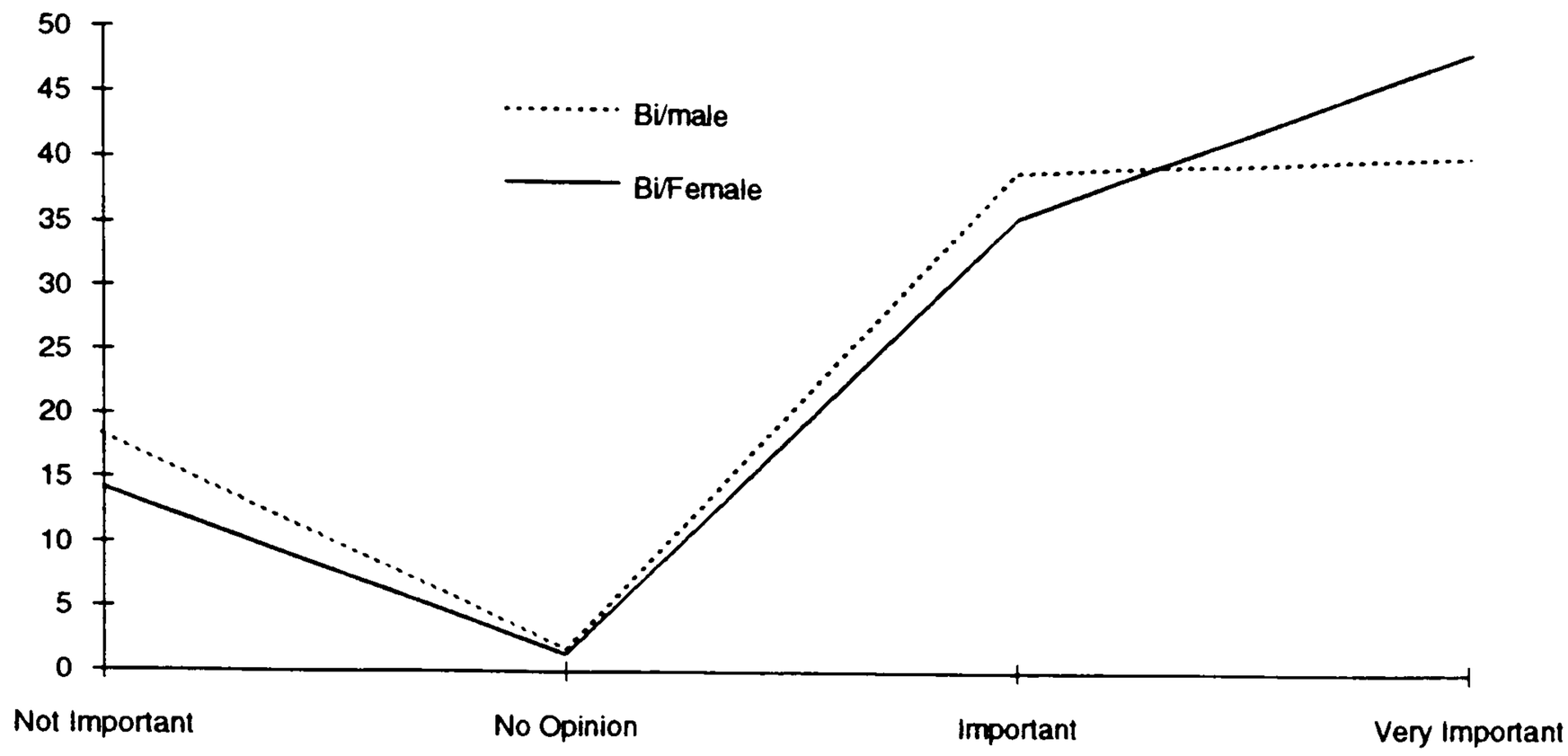


Figure 4.7a: The Instrumental Motivation

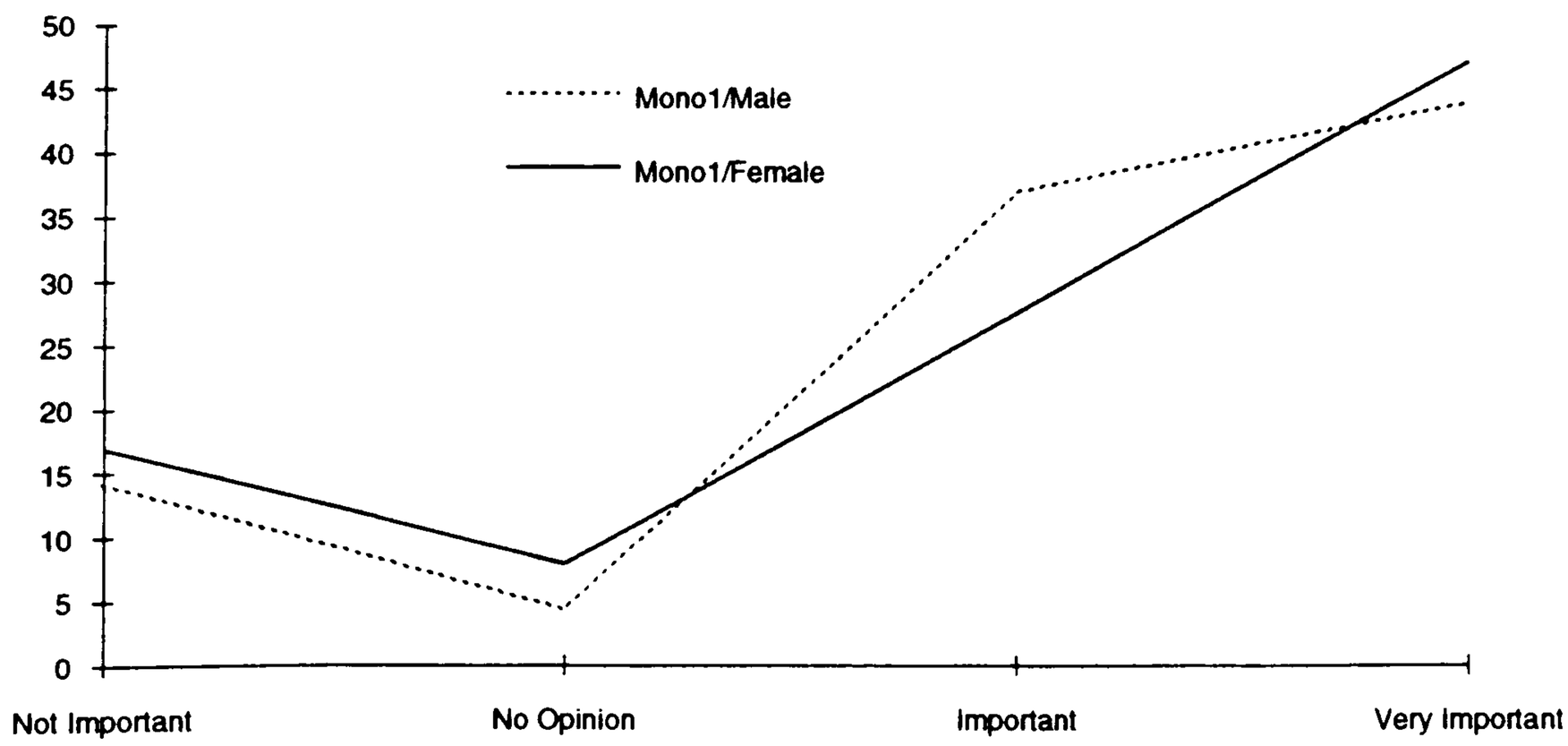


Figure 4.7b: The Instrumental Motivation

In contrast, Figure 4.7c shows that the Monolingual 2 female population has a substantially lower instrumental motivation than the Monolingual 2 male one. The results of this enquiry regarding the relationship between the gender variable/factor and the instrumental motivation make it possible to argue that there is no evidence of any special advantage of one gender over the other.

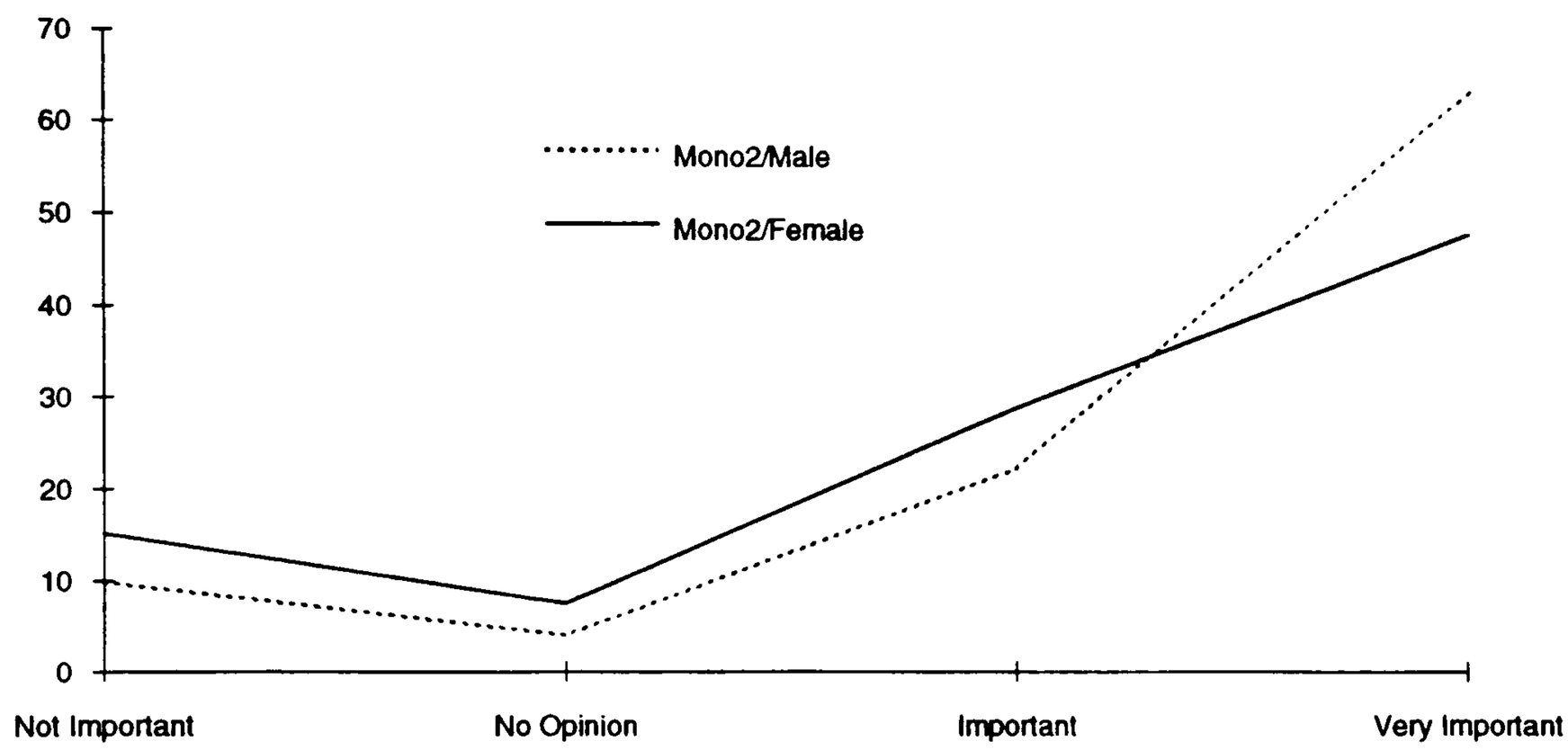


Figure 4.7c: The Instrumental Motivation

What emerges from studying the relationship between gender and the learners' instrumental motivation is a single interpretation, so that another line of enquiry is needed to draw attention to the relationship between their linguistic repertoire and their instrumental motivation. Through the graphic representations of the learners' instrumental motivation (Figures 4.7d and 4.7e) we see that the frequency distributions of Figure 4.7d show substantially more variability than those of Figure 4.7e.

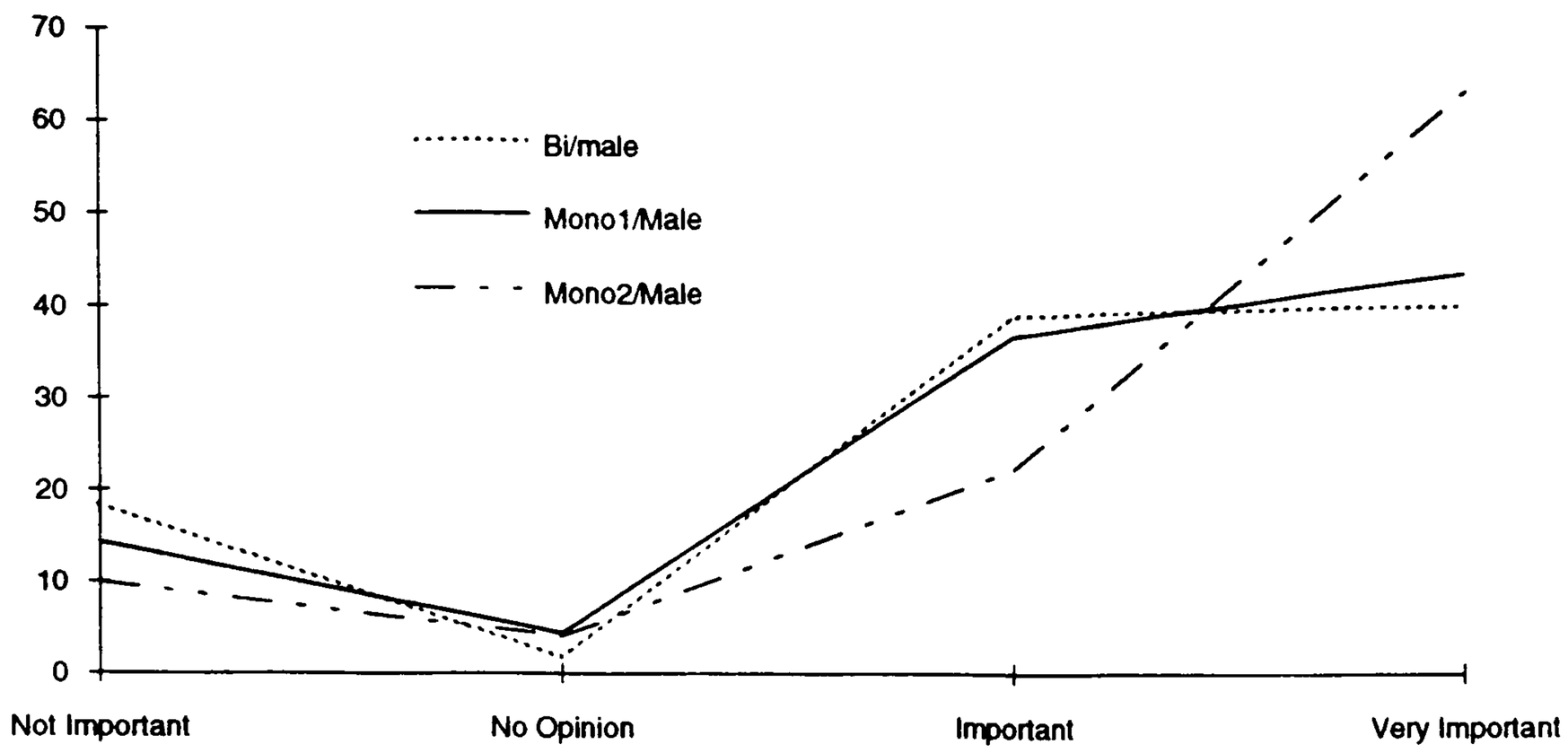


Figure 4.7d: The Instrumental Motivation

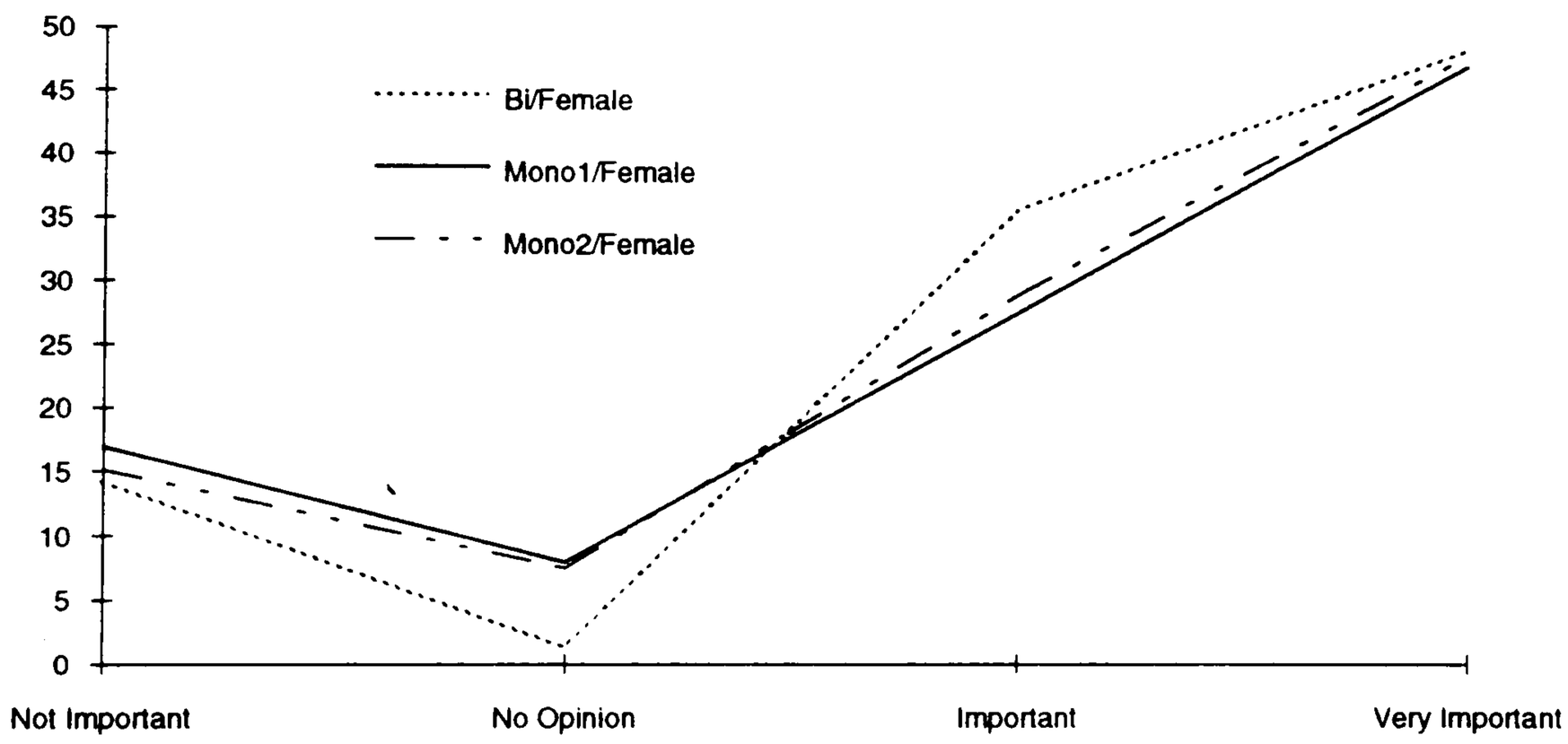


Figure 4.7e: The Instrumental Motivation

As can be seen, the linguistic repertoire variable has no bearing on the instrumental motivation of the language learners of this study. For instance, we can see

that the frequency distributions of the female and male populations (Figures 4.7d and 4.7e), with different linguistic repertoires, are very close, with the exception of those from the Monolingual 2 male population. It should be made clear that this divergency can not be attributed to the linguistic repertoire variable because the Monolingual 1 and Monolingual 2 populations share the same linguistic repertoire, namely Arabic. Nor, in our view, is it the influence of the linguistic aspect of factor (vi)— Exposure to the Target Language. As was pointed out earlier in this chapter (4.3.1.3), this has no impact on their attitudes towards learning English which constitutes an important element in the motivational system.

It is clear from the above findings that we have not found in our study of instrumental motivation that a particular learner variable/factor (gender or linguistic repertoire) is influential enough to be put forward as a fully satisfactory explanation. Our object was not to investigate the learner variables in association with instrumental motivation. Instead, all of these efforts can be considered jointly as steps towards introducing the learners' instrumental motivation unaffected by the learner variables— gender and the linguistic repertoire.

4.4 Summary

We have in the present chapter made an attempt to look at learner factors in terms of language learning. Our contention is that this is useful because in this way we are able to draw a comparative assessment of their foreign language learning outcomes. In other words, the study of the learner factors which have been outlined earlier will enable us to view comparatively the aspects of the learners' foreign language learning outcomes and thus to obtain a more balanced view of foreign language learning.

Nevertheless, we must take note of the possible effects of these factors on language learning outcomes; for example, more intangible, but nonetheless important, is the effect of the optimal age on language learning and subsequently on learning outcomes. As has been pointed out earlier in this chapter (4.2.1), it would seem methodologically unsound to introduce data from the Monolingual 2 population to be assessed comparatively with data from the Bilingual and Monolingual 1 populations. Data from the Monolingual 2 population are likely to reflect features of variability due to the different times at which they started learning English/first exposed to the target language. However, the important consideration is that there is no reason to neglect this factor despite the fact that it has no bearing on their attitudes and motivation towards learning English, as has been shown in 4.3.1.3 and 4.3.2.2. The fact remains that in many language researches this factor has been seen to have an evident effect on language learning outcomes. Ultimately, the exclusion of linguistic data from the Monolingual 2 population is essential in order to obtain more valid and reliable results.

Chapter V

Data Profiling and Results

5.1 Introduction

To begin with, let us consider a few of the general definitions of 'profile' whose senses have provided the necessary foundations for the construction of linguistic profiles. According to Crystal (1982:1) a linguistic profile includes the following three senses of the word 'profile':

(1) the outline or contour of the human face, especially viewed from the side;
(2) a verbal, arithmetical, or graphic summary or analysis of the history, status etc. of a process or relationship; and
(3) a vivid and concisely written sketch of the life and characteristics of a person.

In other words, these three senses come together in constituting linguistic profiles. The relation between these three senses was the basis for profile-construction. A linguistic profile, thus, aims at providing an accurate and comprehensive description of the data available. In Crystal's view (1982:1):

"A linguistic profile is a principled description of just those features of a person's (or group's) use of language which will enable him to be identified for a specific purpose."

In principle, such a definition is in keeping with the range of linguistic areas that profiles can describe, as suggested by Crystal (1982:1):

"Profiles could be constructed for any area of linguistic inquiry, such as the study of literary style, the investigation of disputed authorship, or the analysis of achievement in foreign-language or mother-tongue learning."

It is useful to remember here that an important feature of the linguistic profile charts is their emphasis on principles which are taken from linguistic science. They are based on a synthesis of the empirical findings of the research literature in the acquisition of English as a first language. In this way, they are approximations to adult norms which can be interpreted as the ultimate goals of both the acquisitional and learning processes of English. Linguistic profiles, thus, can be used by medical as well as teaching groups such as language teachers, speech therapists/pathologists, and teachers of the deaf. Linguistic profiling can be used for five procedures:

1. The grammatical procedure LARSP

   'Language Assessment, Remediation and Screening Procedure'.

2. The lexical semantic procedure PRISM-L

   'Profile in Semantics-Lexical'.

3. The grammatical semantic procedure PRISM-G

   'Profile in Semantics-Grammatical'.

4. The segmental phonological procedure PROPH

   'Profile in Phonology.'

5. The nonsegmental phonological procedure PROP

   'Prosody Profile'.

In the present study it has been found that an accurate implementation of

PROP is difficult to achieve. This difficulty is largely due to the lack of non-segmental phonological studies in both the Syrian variety of Arabic and Armenian. This suggests that it is almost impossible to study comparatively the occurrence of differing non-segmental phonological features/prosodic features (intonation, tonicity, and rhythm) in learning English as a foreign language. It is, therefore, taken as axiomatic that, at a certain general level, speech can reflect non-segmental phonological/prosodic variables in foreign-language learning outcomes. Secondly, we have also avoided the use of the quantitative measures of the profiles, on account of the theoretical controversy which has surrounded the statistical characteristics of the linguistic categories in language acquisition generally, and second/foreign language acquisition/ learning specifically. As a result of this concern about the applicability of quantitative measures, we find that Crystal (1982) has left the extent to which they are incorporated into these procedures open. Furthermore, we have found that our primary interest in the present study is in the emergence of the types of the linguistic categories in the data obtained rather than in statistical statements of their relative frequency. Therefore, we fall back on the use of the qualitative measures because we believe that they are far more helpful and illuminating in terms of providing:

"a principled description of just those features of a person's (or group's) use of language"
(Crystal 1982:1).

Nevertheless, in principle, we respect the potential importance of the quantitative features of the profiles.

It can be seen from the above that the essential strength of the profile proce-

dures lies in the ways in which they systematically highlight linguistic patterns for assessment and interpretation. As such, the profile procedures appear promising and in order to illustrate the strength of the linguistic profiles in question, we need to sketch briefly their linguistic constructions. We begin first with grammar, as it has been considered the central component of language which relates phonology and semantics, or sound and meaning (Leech, et al 1986).

5.2 The Profile procedure LARSP

LARSP, Language Assessment, Remediation and Screening Procedure, is a single-page profile chart; it highlights the grammatical strength and weaknesses of a speech sample (see Appendix C). Reading the profile chart LARSP (Crystal, 1982: ch.2; and Crystal, Fletcher, and Garmen 1976: ch.4), we notice that the overall design is divided into a Time-saving section (A), an Interactional section (B,C,D), Acquisitional stages, and a Statistical summary section. In this connection, it is worth mentioning that the interest of the present study is intimately linked with the acquisitional stages, which are implicit in the general theory of the acquisition of syntax. In short, the application of the acquisitional stages for foreign-language learning research purposes would adequately provide us with a full description of the syntactic structures and with information on how the different syntactic elements interact. Yet it is important not to underestimate the other dimensions of the profile chart, which are adequate and relevant for the purposes of other areas of linguistic inquiry, mainly language pathology and discourse analysis.

The acquisitional part of the profile chart is, in theory, based on a synthesis of syntax research findings in normal language acquisition: types of sentence, structure and function. However, in practice, it is recognized that one must expect

individual differences in the rate of acquisition because the chronological age-range is approximate. Syntactic development is a continuous process, but in general, linguists tend to divide it into stages. The stages through which children pass in acquiring their syntactic knowledge are recognized to be seven:

5.2.1 Stage I (0;9–1;6)

This is the period when one-element utterances are used to give orders, statements or requests. One-element utterances are recognized as minor (non- productive) and major (productive) sentences. Minor sentences, in contrast to major sentences, are those sentences whose elements do not permit the application of the grammatical rules of the language to produce an indefinite set of sentences. Under Minor sentences, four headings are recognized:

(i) Responses, e.g. yes, no;

(ii) Vocatives, e.g. Mummie;

(iii) Other, e.g. oh, sorry;

(iv) Problems (one-element utterances which cannot be assigned to a certain category, minor or major).

Under Major sentences, three headings are recognized:

(i) Commands (Comm.), where 'V' is an abbreviated form for imperative verbs, e.g. run!;

(ii) Questions (Quest.), where (Q) stands for question-words, e.g. where, what;

(iii) Statements, in which four categories can be identified:

- 'N' nouns, e.g. car, boy;

- 'V' verbs, e.g. walking;

- Other adjectives, adverbs, pronouns, etc. e.g. nice, quickly, her;

- Problems, items which cannot be clearly assigned to a particular category.

5.2.2 Stage II (1;6–2;0)

This is a stage of two-element sentences, characterized by the emergence of clear syntactic patterns: clause elements (e.g. daddy go) or phrase elements (e.g. big car). Two single elements come together at clause and phrase level. At the clause level, there are five constituent elements:

(i) Subject (S)

A clause contains a Subject plus another clause element;

(ii) Verb (V)

A clause contains a Verb plus another clause element;

(iii) Object (O)

A clause contains an Object plus another clause element;

(iv) Complement (C)

A clause contains a Complement plus another clause element;

(v) Adverbial (A)

A clause contains an adverbial plus another clause element.

The clause profile at this stage, firstly, considers a negative particle (Neg) as a separate clause element. Secondly, it disregards the order of the combination of clause elements.

At phrase level, the profile chart gives the most commonly occurring phrasal sequences:

(i) D N (Determiner + Noun);

(ii) Adj N (Adjective + Noun);

(iii) N N (Noun + Noun);

(iv) Pr N (Preposition + Noun);

(v) V V (Verb + Verb);

(vi) V part (Verb + particle);

(vii) Int X (Intensifier + some other phrase element);

(viii) Other.

This stage includes the beginning of phrase incorporation into clause structure. It is indicated as a 'transitional line' between stage II and III. Also at this stage the morphological features of words seem to emerge as illustrated by word profile:

-ing (but not for nominal use);

-pl (any plural form, whether correct or incorrect, regular or irregular);

-ed (any simple past tense, whether correct or incorrect, regular or irregular);

-en (any past participle form, whether correct or incorrect, regular or irregular);

-3s (any third person singular present, whether correct or incorrect, regular or irregular);

-gen (any genitive form of a noun, whether correct or incorrect, regular or irregular);

-n't (the contracted negative form, whether correct or incorrect);

-'cop (the contracted form of the copula verb, whether correct or incorrect);

-'aux (the contracted form of the auxiliary verb, whether correct or incorrect);

-est (the superlative form of an adjective or adverb, whether correct or incorrect, regular or irregular);

-er (the comparative form of an adjective or adverb, whether correct or incorrect, regular or irregular);

-ly (any adverb, whether correct or incorrect).

5.2.3 Stage III (2;0–2;6)

This is a stage of three-element sentences, characterized by the emergence of three-element clausal and phrasal constructions. At clause level, the following constructions are to be found:

(i) SVC;

(ii) SVO;

(iii) SVA;

(iv) Neg XY;

(v) VCA;

(vi) VOA;

(vii) VO*d*O*i*;

(viii) Other;

(ix) QXY;

(x) VS(X);

(xi) VXY;

(xii) let XY;

(xiii) do XY.

At phrase level, the following constructions are to be found:

(i) D Adj N;

(ii) Adj Adj N;

(iii) Pr D N;

(iv) Pron *p o* (personal pronouns (*p*) and other sorts of pronouns (*o*);

(v) Cop (Copula);

(vi) Aux *m o* (modal (*m*) auxiliaries and other (*o*) auxiliaries);

(vii) Other.

This stage includes the incorporation of phrasal expansions into three-element clauses as indicated by a 'transitional line'.

5.2.4 Stage IV (2;6–3;0)

This is a stage of four-element sentences. The clauses and phrases characteristically contain four elements, along with the development of phrasal coordination. At clause level, the following constructions are to be found:

(i) SVOA;

(ii) SVCA;

(iii) SVO*d*O*i*/ SVO*i*O*d* ;

(iv) SVOC;

(v) AAXY (an alternative order of the adverbials is possible);

(vi) Other;

(vii) QVS / QV-S-V;

(viii) QXY + (the + sign stands when there are more than 2 other elements);

(ix) Tag;

(x) +S (a command with the subject expressed);

(xii) VXY+ .

At phrase level, a variety of constructions are to be found:

(i) NP Pr NP;

(ii) Pr D Adj N;

(iii) cX (any phrasal construction introduced by a coordinating conjunction (c));

(iv) XcX;

(v) Neg V;

(vi) Neg X;

(vii) 2 Aux;

(viii) Other.

5.2.5 Stage V (3;0–3;6)

This stage is characterized by complex sentence formation. Clausal subordination and coordination develop (clauses as subjects, objects, or adverbials) as well as phrasal subordination. At this stage, we notice that there are four types of connecting word:

(i) Coordinating conjunction and;

(ii) Other coordinating conjunctions (c);

(iii) Subordinating conjunctions (s);

(iv) Other.

In statements two classes of clausal connection are recognized: coordination (Coord.) and subordination (Subord.):

(i) Coord 1 (2 clauses linked by and or c);

(ii) Coord 1+ (more than 2 clauses linked by and or c);

(iii) Subord A 1 (a clause which contains an adverbial element);

(iv) Subord A 1+ (a clause which contains at least two adverbial elements);

(v) Subord S (a clause which contains a Subject (s) element);

(vi) Subord C (a clause which contains a Complement(c) element);

(vii) Subord O (a clause which contains an Object(o) element);

(viii) Comparative (a clause which contains a grammatical marker of comparison).

In Questions and Commands, clausal coordination (grouped under Coord.) and the types of subordination and comparison (grouped under Other) are also recognized:

(i) Question Coord;

(ii) Question Other;

(iii) Command Coord; and

(iv) Command Other.

The LARSP chart at this stage not only provides a range of clauses which postmodify the head noun in noun-phrase structures, but also deals with sequences of more than one postmodifying phrase (Postmod. phrase +1):

(i) Postmod. Clause 1 (one clause);

(ii) Postmod. Clause +1 (more than one clause);

(iii) Postmod. Phrase +1 (more than one phrase).

5.2.6 Stage VI (3;6–4;6)

This stage is distinguished by the fact that the grammatical systems in the clausal and phrasal structures are consolidated. The new grammatical features are represented by the symbol (+), whereas errors of grammatical features found earlier on the chart come under the symbol (–). The new grammatical features are the following:

(i) Initiator (items precede the determiner in a noun phrase);

(ii) Coord (two NPs are coordinated without a coordination marker);

(iii) Complex (VPs which are more complex than those listed earlier in the chart);

(iv) Passive;

(v) Complement (a more advanced form of complementation);

(vi) how/what (question-words with exclamatory function).

5.2.7 Stage VII (4;6+)

This stage is characterized by the acquisition of the remaining structures, like patterns of sentence connectivity and patterns of emphatic expression. Nevertheless, it is unclear at what age the grammatical learning is adult in character. Therefore, LARSP focuses only on three acquisitional themes— discourse, syntactic comprehension, and style. Generally, the advanced discourse strategies used to build up more complex themes in connected speech or writing are the following:

(i) A (adverbial connectivity);

(ii) Comment clause;

(iii) Emphatic order;

(iv) It (empty it);

(v) There (empty there);

(vi) Other.

Syntactic comprehension is tabulated in order to indicate the occurrence of any sort of limitations in comprehending the grammatical constructions by means of scanning the syntactic production. Data scanning can also indicate the occurrence of alternative grammatical varieties, or styles (e.g. formal or informal speech).

In this connection, it is worth mentioning that there are several possible ways of transferring the transcribed sample to the profile chart. For example, a full grammatical analysis of the whole transcribed sample may precede the process of profiling, or each transcribed sentence may be profiled as it is analysed. There is thus no generally accepted order in the profiling procedure. In our research, the researcher marked up each single acquisitional stage separately by using the procedure of profiling each transcribed sentence as it was analysed.

5.3 The Profile Procedure PRISM

PRISM, Profile in semantics, is a means of arriving at more informed ideas about the semantic system of a person or a group in a systematic way. It comprises two sets of subprocedures— one dealing with the relationship between semantics and lexicon (PRISM-L), the other with the relationship between semantics and grammar (PRISM-G). To generalize, one can say that PRISM-L and PRISM-G represent the importance of both the grammatical as well as the lexical dimensions for semantic analysis. Yet, it is important to bear in mind that:

"Semantics, unlike grammar and phonology, is a subject about which descriptive generalizations are difficult to make"
(Crystal 1987b:173).

In other words, PRISM is an attempt to reach the above mentioned goal in spite of our marked shortage of theoretical and empirical knowledge regarding the way linguistic meaning is acquired and structured. The linguistic investigation of the nature of meaning in language has developed two main research paradigms, i.e., lexical and grammatical studies in the acquisition of semantics. This means, then, that there is a general awareness that the meaning of a word is dependent upon

its role in the sentence.

5.3.1 PRISM-L (Profile in Semantics–Lexicon)

In accordance with the present state of our knowledge of lexical acquisition, the established patterns of lexical items of the PRISM-L chart plot the emergence of the semantic system. It seems to be particularly important to outline the descriptive frameworks of the PRISM-L 16-page chart (see Appendix D):

(i) Page 1

Page 1 of the PRISM-L procedure provides a general summary of the sample used, including the main statistical findings. As we have mentioned earlier in this chapter, that our focus is not on the quantitative component of profiling, we shall therefore pursue the profiling procedure qualitatively per se.

(ii) Page 2

Page 2 contains four categories of minor lexical items:

1. Unanalysed;
   - (a) Unintelligible
   - (b) Ambiguous
   - (c) Symbolic Noise
   - (e) Other
2. Social;
   - (a) Spontaneous
   - (b) Response
   - (c) Stereotype
   - (d) Comment

(e) Proper names

(f) Other

3. Relational (items whose primary function is grammatical);

(a) Pronominal;

- 1,2,3 (1st, 2nd, and 3rd person pronouns)

- Dem (demonstrative)

- Art (definite and indefinite articles)

- Other (ambiguous or nonspecific reference)

(b) Prepositional;

- Loc (locative)

- Temp (temporal)

- Other (manner)

- Problems

(c) Verbal;

- Be 1,2,3 (all forms of Be)

- Other (the remaining auxiliaries, whether modal or other)

(d) Interrogative;

(e) Tag;

(f) Connective;

(g) Empty (semantically empty items);

(h) Other (relational items which do not fit into any of the above mentioned categories).

4. Avoidance

(the use of a different lexeme because the appropriate lexeme is not available for whatever reason).

(iii) Page 3

Page 3 of PRISM-L provides a quantitative summary of the various major lexical items listed on pages 4-15.

(iv) Pages 4-15

Pages 4 to 15 classify the occurrence of the major lexical items in terms of semantic fields. It must be recognized, however, that the order and the process of the lexical acquisition is suggestive due to theoretical uncertainty. In other words, the assumption that the first sections of the semantic fields represent less advanced fields than the later sections in the course of semantic acquisition by normal children is not sound, because of the lack of research into the order of lexical acquisition. However, in Crystal's view (1982:150), the ordering of PRISM:

> *"is based on a synthesis of the findings to date, supplemented by the use of logical criteria, especially for the later stages".*

All major lexical items are classified according to major themes, major semantic fields and semantic subfields. Each page of the profile chart deals with one or two major themes, where a set of major semantic fields is postulated. Within each of these major semantic fields a set of subfields is postulated, summarized as follows:

1. Human form and Function

   (a) Man (Family, Jobs, Groups, Type, General, Contacts, Location, Character+, Character−, Neutral, and Other)

   (b) Body (Main parts, Limbs, Face, Outside, Health, Inside, Character+, Character−, Neutral, and Other)

   (c) Health (Disease, Protection, People, Implements, and Other)

   (d) Clothing (General, Material, Outer, Footwear, Man, Woman, Neutral, Ac-

cessories, Parts, Caring, and Other)

(e) Food

- Grown (Fruit, Part, Location, Vegetables, Grain, Character, and Other)

- Processed (Type, Dairy, Seafood, Drinks, and Flavouring)

- Grown and Processed (Action, Location, Meals, Utensils, People, and Other)

2. Activity and Sensory

   (a) Moving (Come/Go, Static, Sleep, Animate, Things, and Other)

   (b) Making/Doing (General, Specific, Type, and Other)

   (c) Happening (General, and Other)

   (d) Living (General, and Other)

   (e) Having (Process +, and Process −)

   (f) Thinking (Process, General, Type, and Other)

   (g) Feeling (+,−, Neutral, and Other)

   (h) Sound (General, Specific, Quality, Implements, and Other)

   (i) Sight (Act, Implement, and Other)

   (j) Smell (Act, Character, and Other)

   (k) Taste (Act, Character, and Other)

   (l) Touch (Act, Character, and Other)

   (m) Language (Speak/Listen, Read/Write, Act, Product, People, Character, Implements, Part, and Other)

   (n) Imagination (Type, People, and Other)

3. Leisure

   (a) Recreation (Action, Location, Games, Sports, People, Equipment, Things, and Other)

   (b) Occasions (General, Xmas, and Other)

(c) Shows (Type, Location, Action, People, Implements, and Other)

(d) Music (Instruments, Type, Action, People, Parts, and Other)

(e) Arts (Implements, Type, Quality, People, and Other)

4. Transport

(a) Road (Vehicle, Parts, Action, Location, People, and Other)

(b) Rail (Vehicle, Parts, Action, Location, People, and Other)

(c) Air (Vehicle, Parts, Action, Location, People, and Other)

(d) Water (Vehicle, Parts, Action, Location, People, and Other)

(e) Fuel (General, and Other)

5. Fauna

(a) Animals (General, Pet, Farm, Wild(small), Water, Wild(large), Reptile, Extinct/Imaginary, Noise, Location, Action(us→ them), Action(them→ us), Type, Parts, and Other)

(b) Birds (Types, Parts, Water, Farm, Action, Noise, and Other)

(c) Fish (Type, Parts, Action, Control, and Other)

(d) Insects (Type, Parts, Action, Location, and Other)

6. Flora and Elements

(a) Flowers (Type, Parts, Action, and Other)

(b) Trees (Type, Parts, action, and Other)

(c) Light (Type, Control, and Other)

(d) Colour (Type, General, Action, Implement, and Other)

(e) Fire (Type, Fuel, Control, and Other)

(f) Water (Type, Action, Control, and Other)

7. Domestic Setting

(a) Building (Type, Parts, Outside, Materials, Action, People, Rooms, and Other)

(b) Furniture (General, Bathroom, Bedroom, Living Room, Kitchen/Dining and Other)

(c) Tools (General, Farm/Garden, People, and Other)

(d) Containers (Type, Parts, Action, and Other)

8. Dimensions

(a) Quantity (General, Specific, Act, and Other)

(b) Measurement (Distance, Weight, Volume, Time, Heat, and Other)

(c) Size (+, and −)

(d) Time (Day, Period, Past, Present, Future, Frequency, and Other)

(e) Location (General, Specific, Part, and Other)

(f) State (Quality, Intensity, Like+, Like−, and Other)

9. Institution and the World

(a) Government (Type, People, and Other)

(b) Law (Location, People, and Other)

(c) Education (Type, Part, Action, People, Topic, and Other)

(d) Religion (Location, Implements, People, and Other)

(e) Business (Type, Implements, Action, People, Location, Parts, and Other)

(f) Manufacturing (Location, Equipment, Action, People, and Other)

(g) Space (Entities/Events, Exploration, and Other)

(h) World (Land, Water, Surface, Depth, Location, Climate, and Other)

(i) Minerals (Type, Act, and Other)

(j) Weapons (Type, People, and Other)

(k) Money (Units, Location, Action, Type, and Other)

(l) Other

(v) Page 16

The final page of PRISM-L chart introduces various categories of lexemic relations in a person's (or group's) semantic system. We see that the relations between the lexemes can be analysed in terms of three dimensions:

1. Paradigmatic relations;
   (a) Synonymy
   (b) Opposition
   (c) Hyponymy
   (d) Incompatibility
   (e) Other
2. Syntagmatic relations; and
3. Developmental Errors
   (a) Overextension
   (b) Underextension
   (c) Mismatch.

The PRISM-L procedure requires a full identification of the lexical items in each sentence. In such a case, the words of the sentences must be assigned to lexemes, and entered onto the chart accordingly.

5.3.2 PRISM-G (Profile in Semantics–Grammar)

With the growth of studies in semantic acquisition, it becomes evident that the main elements of sentence structure (Subject, Verb, Object, Complement, Adverbial) can be viewed in terms of their underlying functions/roles in the com-

munication of meaning. Here, meaning is attributed to the functions/roles of the lexical items in the sentence. However, it is possible to have a lexical item with different functions/roles, depending on its part in the sentence sequence. On the other hand, a lexical item can retain its function/role despite its change of position in the sentence sequence. It is therefore important to know the grammatical construction semantically. No doubt it is the above observations which motivated the semantic functional analysis, namely the three-page PRISM-G procedure (see Appendix E).

Perhaps the most fundamental point is whether the proposed developmental stages in PRISM-G constitute a valid basis for semantic functional analysis. Semantic acquisition studies suggest it is not, since there is an absence of empirical research to relate the five proposed stages to chronological ages. However, what has to be appreciated is that the design of the stages in the PRISM-G procedure has an independent role; it can be applied directly to the speech sample in order the semantic structure of the clause and the clause sequences to emerge.

The PRISM-G chart is arranged in the following manner:

1. Unanalysed section

This section deals with sentences or clauses which seem to be semantic errors. They are simply sentences or clauses which prove impossible to assign to a coherent interpretation— sentences or clauses which are unintelligible, incomplete, containing symbolic noise, semantically ambiguous, or stereotyped.

2. Stage I (one semantic-element sentences)

At stage I, the procedure is to draw a distinction between Minor and Major (semantically unproductive and productive) types of sentences in terms of their semantic

functions. Minor sentences are subclassified as:

(a) Social;

(b) Proper names; and

(c) Others.

However, for the minor sentences specification is not subclassified. The major sentences are recognized at stage I as follows:

1. Activity
   (a) Dynamic (Dyn)
   (b) Static (Stat)

2. Entity
   (a) Animate (Anim)
   (b) Inanimate (Inanim)

3. Deictic
   (a) Animate (Anim)
   (b) Inanimate (Inanim)
   (c) Scope (Sco)
   (d) Other

4. Attribute (Attr)

5. Interrogative (Interrog)

6. Other

Throughout this stage we note, on the one hand, that specification is subclassified in the same column which is used for marking the element. On the other hand,

copula is to be marked along with one of the elements, Entity, Deictic, Attribute, Interrogative, or Other. By identifying the subclassifications of specification and introducing the copula for structural semantic analysis, we may indicate their significance in language acquisition/learning and in language therapy/pathology.

3. Stage II (two major semantic-element sentences)

At this stage the major semantic elements are classified according to the following functions:

(a) Actor (Act)

(b) Dynamic (Dyn)

(c) Experiencer (Exp)

(d) Static (Stat)

(e) Possessive (Poss)

(f) Goal (Goal)

(g) Temporal (Temp)

(h) Locative (Loc)

(i) Entity (Ent)

(j) Attribute (Attr)

(k) Other

Throughout this stage we note that element order is not significant and that the copula has no independent semantic function.

4. Stage III (three major semantic-element sentences)

The semantic elements at this stage of development are classified according to the functions listed above. It should be mentioned here that the order of the elements is not significant in the range of combinations specified on the chart.

5. *Stage IV (four major semantic-element sentences)*

Once again, the semantic elements are classified according to the functions mentioned earlier and the order of the elements is not significant.

6. *Stage V*

At this point of development, a wide range of semantic relationships occur within the same sentence, involving coordination and subordination. The matrix at stage V, therefore, identifies coordination and subordination and classifies both the type of semantic relationship as well as the number of clause elements in sequence. It should be noted that the matrix, furthermore, identifies the presence and absence of a connective, and shows whether the clause sequence is acceptable or unacceptable. This dimension of the profiling procedure at stage V is of particular importance in areas of language assessment and remediation.

We can also see that the final page of PRISM-G provides us with two other kinds of sequencing information which are essential in an analysis of discourse. It is important to stress the fact that these are two semantic factors which should be considered in an analysis of discourse for any area of linguistic inquiry.

(a) Order-of-mention

Here, the aim is to see whether there is correspondence between the order of the clauses in a sentence and the order of events in the world. Once this is known, one has guidelines for the limitations both in comprehension and production.

(b) Presupposed T element (T stands for either a teacher or a therapist)

The use of this area of the chart will lead to some illuminating observations regarding the ability to produce correct and/or incorrect semantically self-contained clauses, independent of T's stimuli.

The remaining part of the PRISM-G chart deals firstly with idiomatic structures which defy any sort of conventional semantic analysis because of their inherent idiomatic character. Secondly, it identifies the sentences which prove to be semantic errors on the basis that no coherent interpretation can be assigned to the sentence.

Having described the construction of the PRISM-G chart, we need to consider the way of transferring the information. In the present study, the researcher marked up each single stage of the profile chart separately, using a procedure of profiling each transcribed sentence as it is analysed. Here it is important to mention, as has already been pointed out earlier in this chapter, that the quantitative dimensions of the charts in question will be disregarded.

5.3.3 PROPH (Profile of Phonology)

Crystal's model of the segmental phonological profile (PROPH, see Appendix F) clearly expresses the view that it is a presentation of the English sound system. It involves the phonological description of English used by Gimson (1980). It is to be noted that Gimson's transcription characterizes the English accent known as RP (received pronunciation). While it provides a phonological description of English, it does not distinguish the regional accents of English. It is, therefore, incomprehensive if it is to identify the articulation problems of RP speakers only. What, then, is the current procedure in order to bridge the gap between the RP model and the regional accents? In attempting to link the RP model with the range of regional accents, Crystal involves a section headed Accent Conventions. The heading points out the features of the accent which should be considered before assessing the profile samples. An obvious problem for the use of PROPH in the present study is to sensitize its user (the researcher in this context) to whether

certain sounds should be taken into account or not. As the subjects are foreign language learners, it is impossible to identify the type of English accent to which they were exposed. Accordingly, there will be no account of the subjects' accent. The researcher, therefore, has had to restrict the use of PROPH to the articulation problems of the subjects involved in the present study in comparison with the (RP) pronunciation of English.

The value of PROPH as a procedure to highlight phonological patterns appears in its 3-page section which constitutes the main part of the profile chart. The first page deals with the data base of the procedure. Accordingly, 100-word samples, with a broad phonetic transcription, are usually sufficient to establish the phonological patterns of the data. Needless to say, the number of the transcribed word-types is not a fixed figure, because the aim remains to establish patterns in order to indicate the nature of the phonological problem. As is pointed out by Crystal (1982), the sample could be larger or smaller depending upon our success in establishing the phonological patterns. However, it is interesting to observe that separate sections are provided for the high frequency grammatical items and the lower frequency lexical items. This distinction between high and low frequency lexical items favours the hypothesis that difficulties with the latter causes greater communicative problems.

Page 1 of PROPH furthermore suggests general quantitative indices of the transcribed data. However, we do not need to employ the quantitative dimension of the profile charts for our present research purposes. Pages 2 and 3 classify the segments of the English sound system. The layout of the chart has been devised so that it classifies the segments according to their distribution within syllables as well as their phonetic type. Besides presenting the English sound system, the

layout is free of an acquisitional dimension. The stages in the process of the acquisition of phonology are as yet not fully understood. It is not clear which are the early learned segments and which are the late-learned ones. The PROPH chart is therefore based on the articulatory phonetic parameters and the contrasts involved, putting into consideration what is known regarding the frequency and distribution of English sounds. Nevertheless, in spite of the incompleteness of our knowledge regarding the acquisition of phonology, the set procedures of PROPH are of help.

Turning to the profile procedure, it is necessary to state that the transfer of information from the transcriptional page to the appropriate sections of the chart should be carried out one syllable at a time. This procedure made it possible to classify the phones in terms of the stressed/unstressed distinction, and correct/omitted/substituted forms of representation. The horizontal line, which is drawn within each phone-type, distinguishes between the use of a phone in a stressed or an unstressed syllable. The phones above the line are in stressed syllables, whereas the ones below the line are in unstressed syllables. Another column of the profile chart identifies the stress patterns in polysyllabic words. In other words, a distinction has been drawn between disyllabic words and words with longer sequences. The classification of disyllabic words is made in terms of (a) strong-weak stress pattern ´˘ , (b) weak-strong ˘´ and (c) strong-strong ´´ while longer sequences are put under (3) as they occur. The left-hand and the right-hand columns include the correct and the incorrect realizations of the target stress patterns respectively. The vertical line, which identifies the traditional distinctions of articulatory disability, divides each box into three columns. The first, the second, and the third columns classify the correct, the omitted, and the

substituted representations of the target phones respectively. It should be noted though that clusters are classified as correct if the whole elements are correct; if only one element or neither elements is correct, the cluster is placed in the substitution column. A mark is placed in the omission column only if the whole cluster is missing.

The question, of course, is whether the use of the supplementary pages for data scanning is desirable in the present study. Being a supplementary procedure, PROPH is regarded by Crystal (1982) as complete, if the transcription and the analysis are carried out systematically. Accordingly, completing the transcriptional page and the accompanying profile chart:

"can be sufficient to develop a good grasp of P's (patient's/pupil's) main problems. And because the profile chart provides a comprehensive frame of reference for segment distribution and phonetic type, it is a straightforward matter to identify some of the gaps, imbalances, and so on"
(Crystal, 1982:73).

These then are in Crystal's view the basic stages required for effective phonological profiling. Doubtless the supplementary pages are of true scanning significance; nevertheless Crystal (1982) has argued that they are not essentially the only scanning procedures in order to discover phonological patterns. Furthermore, as Crystal is a clinical linguist, his experiences led him to emphasize the fact that only parts of the procedures in the supplementary pages are usually applied for data scanning purposes. Although there has been no need to analyse the data from the points of view represented on the supplementary pages, the fact remains that they have been on the whole influential. For further explanations of the supplementary

pages of PROPH, see Crystal's excellent review (1982:76–113).

5.4 Results Assessment and Interpretation

Now that we have surveyed the profile procedures we will attempt to assess and interpret the patterns which have emerged from the profile charts. It is important to make clear as well as to recognize the twofold connection within each of the charts concerned, namely application and implication. Nevertheless, there are difficulties involved in this recognition because it is one thing to profile different aspects of a language and quite another to offer interpretations. This does not mean that language profiling cannot highlight patterns as a source for specific interpretations. In fact, because of the intricacies of language it will be essential to do so. If we accept the view that language is complex by nature, instrumentation in language studies must come to terms with these complexities. Therein lies the justification for the application of the profile procedures for the highlighting of patterns of language.

According to the research hypotheses in (1.4), different patterns of language are expected to be found in the interlanguage of the Bilingual population (Group 2) from those in the Monolingual 1 population (Group 1). It is therefore assumed that language number and specifications in the learner's linguistic repertoire determine the operations and strategies in learning a foreign language as well as the potential for language interference. If this view is adopted, one could be led to suppose that the linguistic repertoire has a variable effect on the interlanguage of foreign language learners. In the main, however, we are likely to find free-variational language patterns in the interlanguage of the Bilingual population (Group 2).

At this point the reader might care to know what these profiling procedures

have offered us in the present comparative study of two interlanguages: the interlanguage of Group 1 (the Monolingual 1 population) and the interlanguage of Group 2 (the Bilingual population). We must remind ourselves, however, that gender and linguistic repertoire variables are the bases of the comparative direction of this study. The following section of this chapter will assess the results obtained by using the four profile procedures, which have been delineated earlier, to profile the interlanguages in question:

1. LARSP Results Assessment;
2. PRISM-L Results Assessment;
3. PRISM-G Results Assessment; and
4. PROPH Results Assessment.

As a generalization one can say that profiling as a research instrumentation in the present study can help us to find out whether the variables mentioned above are of any influence upon the interlanguages of Group 1 and Group 2.

5.4.1 Assessment of Results

5.4.1.1 LARSP Results Assessment

For our purposes it is necessary to assess the grammatical patterns of each proposed stage on the LARSP chart separately. This is necessary in order to find the possible relations between the grammatical patterns and the gender variable on the one hand, and the linguistic repertoire variable on the other. In other words, we are saying that the assessment procedure will distinguish most clearly exclusive grammatical patterns from non-exclusive ones, and therefore its function is a necessary part of the enquiry in hand.

At Stage I, in which sentences are restricted to single words and recognized

as minor and major sentences, the profile samples have shown no signs of exclusive grammatical patterns. For example, the Monolingual 1 population (Group 1, Males and Females) as well as the Bilingual population (Group 2, Males and Females) have not produced command (Comm) sentences or problematic minor or major sentences. They have produced under the classification of Minor sentences 'Responses' and 'Other', and under Major sentences 'V', 'N' and 'Other'. In other words, there are no categories represented under minor and major sentences which are noteworthy for their grammatical exclusiveness. It is not suggested that this stage is somehow less important than the others; it plays a central role in the subsequent development of clause and phrase structures. Let us present these grammatical patterns in a tabular form (see Table 5.1).

At Stage II, in which sentences consist of two-element clauses or two-element phrases, the profile samples have highlighted no exclusive grammatical patterns. The results, which are represented under the categories of this stage, show no exclusive grammatical patterns either at the clausal and phrasal levels or at the transitional one where phrases are introduced into the clause structure. At the level of the clause, for instance, the clausal profiles show a marked use of the construction (SV) and an avoidance of (SO) construction. Simultaneously, the phrasal profiles at this stage show, for example, a marked avoidance of (VV) and (V Part) phrasal constructions and a marked use of (Adj N), (Pr N), (DN), and (IntX) phrasal constructions. In view of the importance of clause expansion by phrasal constructions to language acquisition and learning, careful attention needs to be paid to this area on the chart. At the transitional level of this stage, for example, there is marked use of the (X+V:VP), (X+C:NP) and (X+O:NP) formulae. The profile samples are given in Table (5.2).

Table 5.1: Syntactic Features at Stage I

Structural Types	***Mono 1/ Population (Group 1) Subject no.=12***	***Examples***	***Bilin/ Population (Group 2) Subject no.=12***	***Examples***
Comm 'V' *Comm 'N'*	∅ ∅	∅ ∅	∅ ∅	∅ ∅
Responses	12	• mhm • yea • yes • no	12	• ha ha • yes • no
Other	9	• hello • sorry • oh	7	• sorry • oh • hi
'V'	6	• walking • write	7	• visited • learning
'N'	12	• hotel • waiter	12	• cars • building
Other	9	• small • them • sometimes	7	• clean • quickly • never

Table 5.2: Syntactic Features at Stage II

Structural Types	***Mono 1/ population (Group 1) Subject no.=12***	***Examples***	***Bilin/Population (Group 2) Subject no.=12***	***Examples***
SO	∅	∅	∅	∅
SV	12	• they are working/ • I can't translate/	12	• I'm learning/ • everybody watches/
VV	∅	∅	∅	∅
V part	∅	∅	∅	∅
Adj N	12	• small houses • business woman	12	• famous film • scientific subjects
Pr N	11	• in medivine • about England	12	• to university • in music
D N	12	• a mother • the workers	12	• the peoples • some coupons
Int X	11	• very shameful • all happy	11	• very nice • very friendly
V + V: VP	11	• the woman can share/ • they are rushing/	12	• I would know/ • I was shouting/
X + C: NP	10	• is a teacher • be a surgeon	11	• tell a story • have the highways
X + O: NP	12	• put the ball • invent a car	12	• can take the ideas • has big eyes

Besides the emergence of two-element sentences at stage II of syntax acquisition, word-endings with a grammatical function usually begin to be used. However, in spite of the fact that word-endings in English play a minor role in the expression of grammatical relationships, we need to assess the emerged morphological patterns. Morphologically speaking, the profile samples of the word column on the chart show no exclusive patterns, as summarized in Table (5.3). For example, the Monolingual 1 and the Bilingual populations (Group 1 and Group 2, Males and Females) have on the one hand used the (ing, pl, -ed, -en, 3s, 'cop, 'aux, -er) word-endings. On the other hand, they have avoided the (gen, est) word-endings.

At Stage III, in which sentences characteristically contain three-element clauses, three-element phrasal constructions, pronouns, and developed copula and auxiliary systems, the profile samples have shown no exclusive grammatical patterns. The point to be noted is that the grammatical patterns have shown no signs of exclusiveness neither at the clausal and phrasal levels nor at the transitional one (Table 5.4). At the clause level, the profile samples show a marked use of, for example, the SVC, SVO, SVA grammatical constructions, and marked avoidance of, for example, the let XY, VO*d*O*i*, Neg XY grammatical constructions. At the level of the phrase, the phrasal profile samples show a marked use of, for example, D Adj N, Pr D N constructions. Also, the profile samples show the tendency of the Monolingual 1 population (Group 1, Males and Females) and the Bilingual population (Group 2, Males and Females) to use pronouns instead of noun phrases (e.g. Pron *p*, Pron *o*), and developed copula and auxiliary systems (e.g. Cop, Aux *m*, Aux *o*). At the transitional level of this stage, formulae such as XY+S:NP, XY+A:AP, XY+O:NP are found also to be used non-exclusively.

Table 5.3: Word Profile Patterns

Word-endings	***Mono 1/Population (Group 1) Subject no.=12***	***Examples***	***Bilin/Population (Group 2) Subject no.=12***	***Examples***
-ing	11	• telling • running	11	• fighting • singing
pl	12	• sisters • childs	12	• films • lessons
-ed	12	• went • told	12	• stayed • saw
-en	8	• been • got	6	• interviewed • heard
3s	7	• invites • wants	11	• likes • knows
'cop	12	• it's • they are	12	• that's • I'm
'aux	12	• I shouldn't be • I'm study	12	• I don't remember • she will write
-er	9	• better • more clean	9	• more modern • bigger
gen	∅	∅	∅	∅
-est	∅	∅	∅	∅

Table 5.4: Syntactic Features at Stage III

Structural Types	***Mono 1/Population (Group 1) Subject no.=12***	***Examples***	***Bilin/ Population (Group 2) Subject no.=12***	***Examples***
SVC	12	• my language is Arabic/ • all the countries/- are in race/	12	• that's a great city/ • he is a fat man/
SVO	12	• you take your plate/ • I will enjoyed the medical school/	12	• I remember the crowded streets/- • his films finished/
SVA	12	• I visited Kavala and island Thassos/ • I can/. go/-- ((yes))/ go/-- to medical school/	12	• she works in bank/ • (2 syllables) I'll go to Germany/
let XY	∅	∅	∅	∅
VOdOi	∅	∅	∅	∅
NegXY	∅	∅	∅	∅
D Adj N	11	• the English class • the green city	12	• the last hours • the fashion designs
Pr D N	11	• to the others • in the goal	12	• in the morning • to the citadel
Pro p	12	• they took us/ • I searched about them/	12	• I know know him/- • they may eat you/
Pro o	12	• there is one/يعني (=it means) my brother/. • I'm learning something/	12	• I don't think that/ • they must do something/
Cop	12	• and jewels/. were beautiful/ • books are very very large/	12	• it is a big match board/ • my father is dead/
Aux m	10	• they must learn them يعني (=it means)/. • it may be boring/	8	• because she must/. give/ • we could do/
Aux o	12	• I've heard read once/ • I was wearnig/--usual shorts/	12	• I'm comparing between them/-- • the Prince has written it/

Contd./...

XY+S:NP	8	• some husbands help their wives/ • those things are harming the atmosphere/	9	• my uncle had a dog/ • my girlfriend said that/
XY+A:AP	11	• he worked for thirty years/ • they went to Rakka/	10	• I go went to Cyprus/ • I will travel in summer/
XY+O:NP	12	• I don't know the language/ • we climbed the mountain/	12	• I must open the office/ • they can take the ideas more/-

At Stage IV, in which sentences characteristically contain four-element clauses and more complex phrasal constructions, the profile samples are notable for being non exclusive, as is shown in (Table 5.5). The stage IV clausal profile samples have displayed a marked use of, for example, SVOA, SVOC, SVCA clausal constructions, and a marked avoidance of, for example, Tag, VXY+, +S, SVO*d*O*i*, QXY, QVS. Also, the profile samples of a variety of structures at the phrase level have displayed a marked use and avoidance of phrasal structures. For instance, there is a marked use and avoidance of the following phrasal structures respectively, (NP Pr NP, XcX, cX, Pr D Adj N) and (Neg V, 2Aux, Neg X).

At Stage V, in which complex sentence formation is developed, there are no exclusive patterns in the stringing of clauses together or in the embedding of one clause within another, as summarized in Table (5.6). Referring to the connectivity patterns, there is a marked use of coordinating and subordinating connectors (and, c, s, Other) by the groups in question. By contrast, there is also a marked avoidance of Questions and Commands coordination and subordination. Furthermore, the remainder of the profile chart of this stage, for instance, show marked use of Coord. 1, Coord. 1+, Subord. A 1, Subord. C, Comparative and a marked avoidance of Subord. A 1+, Subord. O, Postmod. clause 1, Postmod. clause 1+, Postmod. phrase 1+ constructions.

Table 5.5: Syntactic Features at Stage IV

Structural Types	***Mono 1/Population (Group 1) Subject no.=12***	***Examples***	***Bilin/Population (Group 2) Subject no.=12***	***Examples***
SVOA	12	• they took us to the police/ • I could study it here/	11	• he studied there commerce/ • first wine I drink in Vienne/
SVOC	9	• they told me ok/ • he made her very frightened/.	10	• he prefers me an engineer/ • the journey made me hungry/
SVCA	8	• education is very necessary/ ((ha ha))/ for/-- يعني (=it means)/ countries/ • there is no (more) team in this school/	7	• she is a teacher of (1 syllable)/. in the school/ • there is a great/ a huge blue/- ((*blue *sea))/ in the horizon/
Tag	∅	∅	∅	∅
VXY+	∅	∅	∅	∅
+S	∅	∅	∅	∅
SVOdOi	∅	∅	∅	∅
QXY	∅	∅	∅	∅
QVS	∅	∅	∅	∅
NP Pr NP	8	• the hotel/. on the sea/ • foriegn people to our house/	11	• the the heart of the human body/ • different things from our channel/
XcX	8	• many diseases and many people/	9	• my grandmother/. and my aunt/ • the the new wave/. and the/- the songs/
cX	7	• and/-- museums/-- • and and the Nile/	8	• and his streets/ • and my father/
Pr D Adj N	7	• at the same time/ • to a great bar/	8	• with a loud voice/ • before the last year/
Neg V	∅	∅	∅	∅
2 Aux	∅	∅	∅	∅
Neg X	∅	∅	∅	∅

Table 5.6: Syntactic Features at Stage V

Structural Types	***Mono 1/Population (Group 1) Subject no.=12***	***Examples***	***Bilin/Population (Group 2) Subject no.=12***	***Examples***
and	12	• she need time/ she needs time/and being a mother يعني (=it means) needs time/ • I follow her/ ((yeah))/ and swam to her/	12	• she works to earn money/ and he works at home/- • Montreal is bigger city than Germany/ very clean/ ((ha ha))/ and the people speak English/
(c)	11	• here in our country women wanted to be free/ ((ha ha))/ wanted to enjoy with their freedom/ but/. but their husbands/- saw that it is strange/ • it has pleasant/. ((weather))/-- pleasant *weather/ but I think it gets hot in summer/	12	• our countries are are neighbours/ but I can't can't buy from you anything/ • I knew then so much/ but now I just understand/
(s)	11	• we like education/ because I think education is very necessary/ • the the meat is useful for our body/ ((ha ha))/ because without meat we can/. live in good way/	11	• I can't say it now/ because I/-- I don't know/ • my dad said I must know Spanish too/ because he has plans/
Other	8	• he was telling a group from England/ so I go and walk with them/ • they want to destroy this/ so they build a new city/	7	• she is at home/ so she has enough time to sit with us/ • I didn't say popcorn/ so he didn't understand me/

Contd./...

Quest. Coord *Quest. Other* *Comm. Coord* *Comm. Other*	∅ ∅ ∅ ∅	∅ ∅ ∅ ∅	∅ ∅ ∅ ∅	∅ ∅ ∅ ∅
Coord. 1	12	• we didn't find the way/ and we saw a man/	12	• my first interest is music / and I always listen to BBC top twenty/
Coord. 1+	12	• I don't like popular songs/ and I like classical songs/ classical music/ and I like the old songs of in Arabic/	10	• I go / I went to Greece with my uncle/ we stayed there fornight/ and we/- we have a good time/
Subord. A1	7	• when I was in Kuwait/. I didn't care for how grades I have/	10	• when I was shopping in the Mole/--somebody came and/- told me/
Subord. C	11	• that is what/-- they like to study/	11	• it is what we could do/. to help the Armenian people/
Comparative	7	• there is one/يعني(=it means)/ my brother/. older than I am/	7	• he knows English better/ much better than me/
Subord. A1+ *Subord. O* *Postmod. clause 1+* *Postmod. phrase 1+*	∅ ∅ ∅ ∅	∅ ∅ ∅ ∅	∅ ∅ ∅ ∅	∅ ∅ ∅ ∅

At Stage VI, in which (+) stands for new phrasal and clausal constructions and (−) stands for errors of construction cited earlier, the profile samples display no exclusive grammatical patterns. It is worth mentioning here that LARSP views errors positively; they are thought to indicate progress in grammatical areas of particular difficulty. The profile samples of the new constructions, which are handled under the symbol (+), have highlighted a marked use of, for example, Complement and a marked avoidance of, for example, Initiator, Coord. Exclamatory how/what clauses, passive, complex constructions. On the other hand, the divisions in the error box at this stage, which reflect the main distinctions between Clause, Phrase, and Word Connectivity, show that the types of problems encountered by the Monolingual 1 population (Group 1, Males and Females) and the Bilingual population (Group 2, Males and Females) are not exclusive. However, the point to be noted is that 'errors' are considered from the viewpoint of the adult language target. Under Connectivity, the profile samples show marked problems in using the connecting words (and, C, and S). Within the clause, the subjects have non-exclusively encountered the problem of element omission (Ø), element order($\Leftarrow\Rightarrow$) and Concord. Under phrase, the profile samples of the classifications of the noun phrase (NP) have displayed non-exclusive errors (e.g. D Ø, Pr, Pron*P*, and Pr Ø). Also, within the verb phrase (VP), the profile samples of the VP classifications have shown non-exclusive errors, as in Aux*O*, Aux*O* Ø, and Cop. Under word, the profile samples of errors in the inflectional endings of nouns (N) and verbs (V) have also shown no exclusive patterns. The errors are, for example, logged non-exclusively under N irreg, and V irreg. Let us present these grammatical patterns in a tabular form (Table 5.7).

Table 5.7: Syntactic Features at Stage VI

Structural Types	***Mono 1/Population (Group 1) Subject no.=12***	***Examples***	***Bilin/Population (Group 2) Subject no.=12***	***Examples***
Complement	12	• I very interested to see it/ • all the countries/- are in race/. to win/-	12	• there are steps to go down/ • it's difficult to do more/
Initiator	∅	∅	∅	∅
Coord.	∅	∅	∅	∅
Complex	∅	∅	∅	∅
Passive	∅	∅	∅	∅
how/ what	∅	∅	∅	∅
Conn. and	6	• my mother went out of the house/.and we didn't take our address/	7	• she works in that bank/ but she has two children/
Conn.C	6	• we go up the mountain/ and we didn't find the hotel	7	• I don't like to listen to any song/--But I don't understand the words/
Conn. S	7	• it have mountains/ because I like it/	7	• because English is now international language/ whenever wherever we are go/
Element ∅	12	• they have no/--	12	• I don't him/
Element ⇄	6	• an Arabic man we saw/	8	• five minutes or ten minutes we go/
Concord	8	• everyone have a hope/	12	• he don't he don't know/
D ∅	11	• because books are very very large/	12	• I want to be doctor/
Pr	7	• this cars/ run from the petrol/	11	• but I'm/- interested of children/
Pron p	7	• it's a girl/ (in a context where 'she' is required)	8	• the people I don't like it/ (in a context where 'them' is required)
Pr ∅	7	• no one look your face/	10	• to take care the childrens/
Aux o	4	• I weren't interesting in this school/	4	• they be playing only/
Aux o∅	4	• (and we) walking walking/	6	• my husband working at home/
Cop	7	• the other younger than me/	10	• I afraid/
N irreg	6	• childs	6	• childrens
V irreg	4	• swumed	3	• felt (in a context where 'fell' is required)

At Stage VII, in which syntax acquisition comes to be commensurate with the adult syntactic system, the profile samples have shown some exclusive as well as non-exclusive patterns. This is, therefore, contrasted with Crystal's view (1982) that stage VII has little real assessment value because of its lack of acquisition research. Under the Discourse category, the profile samples have, on the one hand, displayed exclusive use of the empty 'there' by the Monolingual 1 population (Group 1); on the other hand, they have displayed non-exclusive use of Comment Clause, emphatic order, and empty 'it', as well as non-exclusive avoidance of A (=adverbial) Connectivity (Table 5.8). Nevertheless, there is one other point that should be noted when assessing the profile samples of the Comment Clause. In spite of the fact that the profile samples have shown non-exclusive use of comment clauses in the target language/English, the Monolingual 1 population (Group 1, Males and Females) has used exclusively Arabic comment clauses in addition to the English ones. In comparison, the profile samples of the Bilingual population (Group 2) have highlighted translated comment clauses from Armenian into English rather than from Arabic into English besides the English ones. Finally, the category of 'Syntactic comprehension' seems to have shown non-exclusive intact syntactic production and comprehension in an informal speech Style shared by both groups.

Table 5.8: Syntactic Features at Stage VII

Structural Types	***Mono 1/Population (Group 1) Subject no.=12***	***Examples***	***Bilin/Population (Group 2) Subject no.=12***	***Examples***
A Connectivity	∅	∅	∅	∅
there	4	• there is the river Euphrates in Rakka/ • near the mosque/ there were man/	∅	∅
Comment Clause	6	• it is not/- very very good/ you know they/. they complex the study/ • I haven't practised to talk/ freely/ ((I see))/يعني (=it means)/--	9	• I want to know in England/ how the education begin/ I mean that/- ((at university level))/ yes I mean that/. • I do you know/ I didn't design anything/
Emphatic Order	4	• the capital Istanbul/ I visited/	3	• Lisa Stansfield/ / I liked it very very much/
it	5	• it is in the Kuwait Oil Company/ he worked for 35 years/	4	• Frankfurt/ it's a very beautiful city/
Arabic Comment Clause	9	• if يعني(=it means)/--- if there/ if her life is/ • the places are يعني (=it means/. very similar/	∅	∅
Translated Armenian Comment Clause	∅	∅	10	• and there is/--not/--- what to say(=intʃ bɑdi esem)/--- they haven't good or something/--- • no we got in summer/ ((yeah))/ the snow /what to say (=intʃ bɑdi esem)/ the place are in snow/

5.4.1.2 PRISM-L Results Assessment

Similar considerations apply to the assessment of PRISM-L results. It cannot be automatically assumed that the lexical systems of Group 1 and Group 2 are identical in relation to English as a foreign language, although they may well be. All the lexical items of the samples are, therefore, bound to be assessed against the standards of lexical semantic analysis. PRISM-L, thus, provides:

> *"an initial classification of lexical items, which can provide the motivation for a more principled investigation of P's (P stands for pupil or patient) semantic system than would otherwise be possible"*
> *(Crystal, 1982:140).*

However, the 16-page component of PRISM-L is a fairly representative framework for the analysis of the meanings conveyed by the lexical elements of a sentence. The procedure of PRISM-L assessment will most clearly distinguish exclusive lexical patterns from other patterns, and therefore its function is a necessary part of the enquiry in hand.

In an attempt to distinguish the lexical patterns in the profile samples, we have not involved page 1 of the PRISM-L chart which includes the main statistical findings. It should however be pointed out that we are concerned with patterns rather than with quantitative statements.

Page 2 of PRISM-L, which classifies the minor lexical items, is divided into four main sections: Unanalysed, Social, Relational, and Avoidance. Under these four headings further subcategories are recognized and obtaining an accurate assessment is often not easy. We may face some difficulty in giving sound interpretation to the patterns when part of a heading (i.e. a subcategory) is exclusively or non-

exclusively used. For example, the profile samples of the subcategory 'empty', under the Relational heading, have highlighted an exclusive use of the empty 'there' by the Monolingual 1 population (Group 1, Males and Females). Yet on the whole, the profile samples of the minor lexical items have shown no exclusive patterns. It should also be plain that under the heading 'Comment', the Monolingual 1 population (Group 1, Males and Females) have exclusively used Arabic comment clauses besides English ones. We must be equally aware of the occurrence of translated comment clauses from Armenian into the target language/English rather than from Arabic into English in the profile samples of the Bilingual population (Group 2, Males and Females) in addition to the comment clauses in English. In exploring this area we have to classify the comment clauses as if they were single items because their function is parenthetic to the meaning and structure of the sentence. No doubt these findings go hand in hand with the earlier findings in the profile samples of LARSP regarding the use of comment clauses.

Pages 3 to 15 account for the classification of the major lexical items which constitute the majority of a language's lexicon. In other words, they are the lexical items that convey most of the sentential information. As can be seen in this part of PRISM-L chart, all major lexical items have been approached in two ways: (1) quantitatively (see page 3); and (2) qualitatively (see pp. 4-15). Together the two constitute, from the point of view of assessment, the aim of a principled investigation of P's (pupil's/patient's) semantic system. Page 3 of PRISM-L can also provide us with a qualitative rather than a quantitative summary of the semantic fields and subfields of pages 4-15. Broadly speaking, our main interest lies not in the number of items used in the semantic fields and subfields but in the lexical range of the subjects/pupils involved in the present research.

We may ask ourselves to what extent the samples give representative pictures of Ps' lexicons. It is hardly imaginable that one could get a representative picture from a short sample, and so it is not surprising to find Crystal weighing up the importance of a long sample which covers a few topics since:

"Normal conversation proceeds thematically, with certain topics being introduced and explored, before new topics are moved on to"
(1982:165).

The researcher of the present study was strongly conscious of the above mentioned component in his data collection procedure. He, too, considered introducing and exploring a number of topics during the interview sessions in order to meet the paradigms of normal conversation and to recognize language as a living reality.

Let us now look closely at this section of the profile chart. If we want to assess the lexical patterns adequately, it is reasonable not to restrict our field of vision to pages 4-15. Page 3 can be looked upon as an overt indication of the semantic fields used in the samples. It is evident from the profile samples of the major lexical fields and subfields of pages 4-15 (for examples see Tables 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, and 5.8) and the supporting summary of page 3 (Table 5.9) that there are no exclusive patterns regarding the use of the major lexical items. We can, furthermore, identify non-exclusive balanced lexical ranges. This is, of course, the nature of normal semantic acquisition based on the assumption that lexical items are thought of as belonging to a semantic field.

Table 5.9: Major Lexemes (Summary)

Major Semantic Field	***Mono 1/Population (Group 1) Subject no.=12***	***Bilin /Population (Group 2) Subject no.=12***
Man	12	12
Body	7	8
Health	9	9
Clothing	6	4
Food	4	5
Moving	12	11
Making/Doing	12	11
Happening	8	10
Living	6	5
Having	12	12
Thinking	9	12
Feeling	12	12
Sound	6	4
Sight	11	11
Smell	∅	2
Taste	1	∅
Touch	1	∅
Language	10	12
Imagination	∅	∅
Recreation	7	6
Occasions	3	∅
Shows	6	10
Music	2	4
Art	2	2
Rail	1	∅
Road	5	8
Air	∅	1
Water	2	2
Fuel	1	∅
Animals	4	4

contd./...

Birds	∅	1
Fish	∅	2
Insects	∅	∅
Flowers	1	∅
Trees	4	1
Light	1	∅
Colour	3	6
Fire	∅	∅
Water	1	1
Building	11	10
Furniture	5	3
Tools	∅	∅
Containers	∅	∅
Quantity	11	12
Measurement	9	10
Size	10	10
Shape	1	∅
Time	12	11
Location	12	12
State	12	11
Government	9	11
Law	4	1
Education	12	12
Religion	5	3
Business	2	4
Manufacture	4	1
Space	4	2
World	12	7
Minerals	1	∅
Weapons	1	1
Money	5	5
Other	10	12

In considering page 16 of PRISM-L, which deals with the systematic use of lexemes, a basic distinction between three types of lexemic relationship has been established: (a) Paradigmatic; (b) Syntagmatic; and (c) Developmental error. They are looked upon as an indication of the semantic acquisition progress. However, if the ultimate objective of page 16 is to provide evidence of an emerging semantic system, then our main concern must be the way in which the lexemes are related. Therefore, in the present section we are more concerned with the sense-relationships, lexeme-sequences, and analogous errors in the speech samples rather than with the mere assessment of the lexemes themselves. This section serves as criteria by which to assess the lexemic relationships in the speech samples of the present study. The profile samples have been assessed in the light of this aspect of page 16 of PRISM-L. For example, under Paradigmatic relations, the profile samples have shown non-exclusive correct and incorrect use of Synonymy, and non-exclusive correct use of Opposition, Hyponymy and Incompatibility. Moreover, there has been no evidence of incorrect use of Opposition, Hyponymy, and Incompatibility by both groups (Males and Females). Likewise, the profile samples under Syntagmatic relations and Developmental errors have highlighted non-exclusive patterns. On the one hand, there is a complete avoidance of the use of lexeme-sequences; and on the other, there is no evidence of an immature understanding of the meaning involved in the lexemes by every subject in this research (see Table 5.10 for some examples of these lexemic relationships).

Table 5.10: Lexemic Relationships

Types		*Mono 1/Population (Group 1) Subject no.=12*	*Examples*	*Bilin/ Population (Group 2) Subject no.=12*	*Examples*
Paradigmatic Relations	*Synonymy*	6	• saw that it is strange/ or something extraordinary/ • his hair is dark/ ((ha ha))/ black/ (incorrect) • in the examination/ in the tests/	8	• it's difficult/. it's hard to do/- • they not using deodarants/. sprays/ (incorrect) • they speak/ talk to you/
	Opposition	4	• some people want to restore this/ and someone want to/. destroy this/ • no not on a hill/ not in a valley/ • it's a small town/ it is not big/	7	• put the food to them and sleeps/ after she wakes up/ • I don't saw it from the/- very particular/ but I saw in general/ • they have some streets dirty/ some streets too clean/
	Hyponymy	4	• there are many gardens and trees/ • students don't like maths/ and science/ • this water from the ice/	5	• there was animals/ donkeys and monkeys/ • I don't know/-- I love it/ I like it/ • it's an ancient city/ its buildings/ its hotels/-
	Incompatibility	4	• the ocean will be/-the sea will be up/ • it was very interesting/ was beautiful/ • the servant/ the waiter came to the room/	3	• I was near my table/. near my desk/ • my father told the man/ he asked him to/-- • there is no smoke/ or no polution/

Contd./...

Syntagmatic Relations		∅	∅	∅	∅
Develomental Errors	*Overextension*	∅	∅	∅	∅
	Underextension	∅	∅	∅	∅
	Mismatch	∅	∅	∅	∅

The illustration above (Table 5.10) of the lexemic relationships from the populations in question may indicate that it is unnecessary to implement the final page of PRISM-L (page 16) in profiling language learning outcomes. But it should be emphasized that it is often not possible to be certain as to learner's lexemic relationships in an interlanguage speech sample. The second concern which motivated the implementation of page 16 is that we want to check the subjects' ability of systematic use of lexemes in the target language, English. It is therefore important to know, may be in clinical work more than in non-clinical, what lexemic relationships the patients or learners use.

5.4.1.3 PRISM-G Results Assessment

Along with the assessment of the semantic function of the lexical items, the PRISM-G chart is particularly important for the assessment of the lexical items from a grammatical point of view. It is equally necessary to be able to identify the roles/functions performed by the lexical items in the communication of meaning. The importance of this characteristic in language clinical and non-clinical work lies in the fact that it shows what functions/roles have been attributed to the lexical items by patients/pupils. In other words, the profile chart of PRISM-G must be able to highlight the difficulties that patients/pupils encounter in attributing functions/roles to the lexical items used in a sentence. However, if we emphasize the grammatical aspect of semantic acquisition, PRISM-L and PRISM-G might well be regarded as complementary to the systematic study of linguistic meaning.

The recognition of the five stages of PRISM-G refers to the emergence of the semantic structure of the clause (Stages I–IV) and the clause sequences (Stage V). Before assessing the profile samples of PRISM-G, we want first to mention that

the five stages are not related to ages. Secondly, they have been given the main emphasis in comparison with the Unanalysed section. This is due simply to the fact that there is a lack of information concerning developmental semantic norms. As such, the conventional semantic analysis will fail to give coherent interpretation of sentences which seem to be semantic errors.

To the question of whether the profile samples of the Unanalysed section of PRISM-G have highlighted any exclusive patterns, the answer is negative. Corroborative evidence for the non-exclusive use of patterns in terms of semantic function was further offered in the five stages. The profile samples of Stage I, first of all, have shown that both element function and element specification have been non-exclusively used in one semantic element Minor and Major sentences. On the level of element function, we find that there is neither an exclusive use of Social minor elements nor of Activity major elements. On the level of element specification, we also find non-exclusive use of, for example, Attribute, Scope, and Possessive specifications. Secondly, with regard to the Copula use at this stage, which has no independent semantic function, it seems that it goes along with the non-exclusive use of the Major lexical items, as summarized in Table (5.11).

Table 5.11: Semantic Structures at Stage I

Structural Types	***Mono 1 /Population (Group 1) Subject no.=12***	***Examples***	***Bilin/Population (Group 2) Subject no.=12***	***Examples***
Minor Sentences	12	• thanks/ • yes/ • Australia/	12	• sorry/ • no/ • Beirut
Major Sentences	12	• Arabic man/ =Animate Entity + Attribute • pink/ =Attribute • clothes/ =Inanimate Entity	12	• very busy/ =Attribute + Other • good colours/ =Inanimate Entity + Attribute • region/ = Loc

In this part of our study, it is interesting to reflect that the profile charts of Stages II to IV provide the same guidelines to the emerging semantic structure as Stage I, except for the distinction which must be made between the number of clause elements. Stages II, III, and IV are indicated by the number of clause elements. Like Stage I, which we have earlier considered as a stage of semantic structure emergence in its own right, we have also considered Stages II to IV. In other words, we have attempted to assess in a similar way the emergence of the semantic structure of each stage by itself. However, did we observe exclusive emergence of semantic structures in the profile samples of Stages II to IV? What interested us particularly in the profile samples of Stages II to IV is that non-exclusive semantic structures have emerged at the element and at the specification levels, as is shown in Table (5.12). Nevertheless, it is this observation that should be examined in order to see if it has been deviated from, in clause sequences. This is a process which is precisely reflected in the matrix as well as in the two other sets of sequencing information at Stage V, as we shall see below.

Table 5.12: Semantic Structures at Stages II, III, IV, and V

Stage	*Mono 1/Population (Group 1) Subject no.=12*	*Examples*	*Bilin/Population (Group 2) Subject no.=12*	*Examples*
II	12	• they can enter/ =Act + Dyn • he doctor/ =Entity + Entity • the headteacher there/ =Entity (Definiteness) + Loc	12	• he like/ =Act + Act • my mother at home/ =Entity (Possessive) +Loc (Scope) • they typical scences/ =Entity + Entity (Attribute)
III	12	• we invent a car/ =Act + Dyn + Goal (Definiteness) • I have an organ/ =Poss + Stat + Goal (Definiteness) • he was walking in the metro/ =Act + Dyn + Loc (Scope + Definiteness)	12	• you speak to him/ =Act + Dyn + Other • you have knowledge/ =Poss + Stat + Goal • I don't know the place =Exp + Stat + Loc (Definiteness)
IV	12	• I've read many subjects about it/ =Act + Stat + Goal (Attribute) + Other • it gets hot in summer/ =Exp + Stat + Other + Temp (Scope) • I can talk with people English/ =Act + Dyn + Other (Benefactive) + Goal	12	• this year they gave awards to Pacco Raban/ =Temp (Deictic) + Act + Dyn + Goal + Other (Benefactive) • it have some subjects in it/ =Poss + Stat + Goal (Attribute) + Loc (Scope) • we have a good time there/ =Stat + Goal (Definiteness + Attribute) + Loc (Deictic)
V	12	• it was better than now/ because my sister was in this school/ (Incorrect Cause Connective) • the waiter came to the room/ and told me whether I want breakfast/ (Addition Connective) • there are many side roads/- so that people can walk on it/ (Purpose Connective)	12	• I was small/ when I travelled there/ (Temporal Connective) • I don't know Europe/- but I think in America/ they have such things/ (Contrast Connective) • I visited Amman/ but I was a child/ (Incorrect Contrast Connective)

Stage V lays emphasis on the semantic relationship of the clauses in the sequence. This relationship is, on the one hand, understood in terms of clause subordination and coordination. On the other hand, it has been related to the pragmatic aspect of the English language. Without dealing with the components of Stage V in detail we will focus on the exclusiveness of the semantic patterns which emerged. From the profile samples of the matrix (Clause (A-B) Sequences) we can derive no exclusive patterns in the eight recognized types of semantic relationship (see Table 5.12). In other words, the Stage V matrix has shown that the ability to develop clause sequences as well as the errors in developing good clause sequences are not exclusive to a certain group or to a certain gender. For example, we find non-exclusive correct and incorrect use of Addition or Condition semantic relationships. Further evidence came from the other sequencing information: 'Order-of-mention' and 'presupposed T elements'. They provide non-exclusive patterns, as is shown in Table (5.13). For example, the clauses in the profile samples of the Monolingual 1 and Bilingual populations (Group 1 and Group 2, Males and Females) have corresponded correctly to the world events. Also, in the area of producing semantically self-contained clauses, both groups (Males and Females) have depended on T's stimuli (the interviewer's in this context) and presupposed one or more elements correctly and incorrectly.

The remaining sections of Stage V are constructed in order to identify sentences with an idiomatic character as well as semantically erroneous sentences. It is clear from the profile samples (as can be seen in Table 5.13) that the groups concerned have avoided the use of sentences with an idiomatic character. We could also identify non-exclusive semantic errors in the profile samples; that is to say, sentences which have defied any sort of coherent interpretation.

Table 5.13: Sequencing Information at Stage V

Type	*Mono1/ Population (Group 1) Subject no.=12*	*Examples 'I' and 'S' stand for Interviewer and Subject respectively*	*Bilin/Population (Group 2) Subject no.=12*	*Examples 'I' and 'S' stand for Interviewer and Subject respectively*
Order-of-Mention	12	• I born here/ and went there in/- (C1 → C2) • I went/ and the man told me/ come up and try the bicycle/ (C1→C2) • I was crying/ ((ha ha))/ and the/-- the men/. who work that/. came and/-- speak with me/ spoke with me/ (C1→C2→C3)	12	• at the morning/ she does his house working/ and goes/- ((shopping))/ *shopping/ and at afternoon/ she has enough time to sit with us/ to speak with us/ (C1→C2→C3) • somebody came and/- told me can you/- can you buy this/ (C1→C2) • he was sitting near me/ and I kicked him with my/ with my/ (C1→C2)
Presupposed T elements	12	• *'I'* why do you want to go to England/ *'S'* because I like to travel very much/ (Whole clause presupposed) • *'I'* what do you think of it yourself/ *'S'* boring/ (2 elements presupposed)	12	• *'I'* what did you do last summer/ *'S'* I was here/ (Scope presupposed) • *'I'* do you want to be a working mother/ *'S'* I wished/ I wish to be/ (Goal presupposed)
Idiomatic	∅	∅	∅	∅
Error	7	• and they/. make a rest for me/ • we have to/. to be/. the best of the animals/	8	• I said that/ if one one day/- like our Turkish that makes heard/ • they are I mean/ when they saw/ they speak don't/--

Having shown the similarities between the results of Group 1 (the Monolingual 1 population) and Group 2 (the Bilingual population) at the five stages of development on the PRISM-G chart, we should mention that they do not indicate at what acquisitional level the subjects are. Of course, other quantitative tasks will have to be used to investigate this particular point which is not the purpose of the present study. As was suggested earlier in section (5.1), we did not fall back on the use of quantitative measures because our primary purpose is in the emergence of the types of the linguistic categories in the data obtained rather than in quantitative summaries.

5.4.1.4 PROPH Results Assessment

As we saw in (5.3.4), Crystal (1982) maintained the position that the completion of the transcriptional page and the accompanying profile chart is sufficient for an insight into the P's (patient's/pupil's) main phonological problems. This means that Crystal has put forward the idea that PROPH is fundamentally a 2-page chart. By basing his research on the above position, the present researcher regards the completion of the 2-page accompanying profile chart as more crucial than the completion of the supplementary pages. He did not find it helpful to devote time to the completion of the supplementary pages, because it was a straightforward matter to identify the phonological problems. It should be noted that, in considering the phonological problems, our use of PORPH has been restricted to RP pronunciation for reasons indicated in (5.3.4). Let us now look at the phonological problems that have been highlighted in the profile samples (Table 5.14).

Table 5.14: Phonological Problems

Features	***Mono 1/ Population (Group 1) Subject no.=12***	***Examples***	***Bilin/ Population (Group 2) Subject no.=12***	***Examples***
/ə/→[ər] /ɜ/→[ɜ:r] /a:/→[a:r]	12	• return ['ritɜrn] • summer ['sʌmər] • search [sɜ:r ʃ] • remember ['rimembər] • party ['pa:rti]	12	• learn [lɜ:rn] • world [wɜ:rld] • care [keər] • colour ['kʌlər] • hard [ha:rd]
/əʊ/→[ɔ:]	12	• go [gɔ:] • home [hɔ:m] • programme [prɔ:'græm] • slow [slɔ:] • smoke [smɔ:k]	12	• told [tɔ:ld] • close [klɔ:s] • know [nɔ:] • hole [hɔ:l] • hotel [hɔ:'tel]
/l/→[ɫ]	6	• building [biɫ'diŋ] • English [iŋ gɫiʃ] • uncle [ʌŋ kɫ] • capital ['kæpiɫ] • live [ɫiv]	∅	∅
/p/→[b]	5	• person ['bɜ:rsn] • pushed [buʃd] • player [bleiər] • help [helb] • people ['bilbl]	∅	∅

Contd./...

/θ/→[s]	7	• think [siŋk] • sixth ['siks] • something [sʌm'siŋ] • thieve [si:v] • thought [sɔ:t]	∅	∅
/ð/→[z]	7	• them [zəm] • other [ʌðər] • clothes [klɔ:zəs] • mother [mʌ'zər] • together [tə'gezər]	∅	∅
/θ/→[t]	∅	∅	12	• months [mʌnts] • think [tiŋk] • nothing ['nʌtiŋ] • cathedrals ['kæti:drəls]
/ð/→[d]	∅	∅	12	• other [ʌdər] • clothes [klɔ:ds] • than [dæn] • father ['f a:dər] • these [di:s]

It is curious that we can easily distinguish non-exclusive as well as exclusive phonological problems in some of the segments of the English sound system. The following sketch, however, picks out for assessment the phonological features which characterize non-exclusive and exclusive phonological problems. These features might appear to be of particular significance from the foreign language learning perspective.

Here we will first cite the non-exclusive phonological problems. An example would be the constant realization of the approximant /r/ as alveolar in initial, medial, or final syllabic positions. This also proceeds along similar lines in realizing /r/ clusters. It might therefore be possible to say that the accent reflected in the profile samples is not an r-less accent. This realization is not surprising, because it can be argued that it is the influence of the English spelling system on their phonological outcome. It is, of course, supported by the traditional method of teaching, which the subjects of this study were exposed to (see section 3.2), focusing primarily upon the reading and writing modalities in learning a foreign language. Should, then, the constant realization of /r/ as alveolar in all word contexts be conceived as a phonological problem, or should we think of it as a free variation of a phonological feature? In raising this question, we have to point out once more the importance of considering RP pronunciation as a model for the phonological assessment in the present research. We have further found that the diphthong /əʊ/ (mid-central vowel) has non-exclusively been realized as [ɔː] (mid-back vowel) by both groups (Males and Females). This would mean that the substituted phone [ɔː] is considered to be abnormal in relation to the target phone /əʊ/.

/əʊ/ ⟶ [ɔː]

[+*glide*] ⟶ [-*glide*]

Moreover, the distinction between the stressed and unstressed syllables, which is incorporated in the procedure of PROPH, has given us further evidence of non-exclusiveness in the profile samples. Of course, foreign language learners' abilities often vary in distinguishing between stressed and unstressed syllables. This sort of variability is accepted, but usually the exclusiveness of the variability needs to be considered. In the light of this understanding of the use of stressed and unstressed syllables, the profile samples have shown a non-exclusive correct and incorrect use of both stressed and unstressed syllables by the groups in question.

Besides the non-exclusive phonological patterns, we have laid emphasis on the exclusive patterns which have emerged in the profile samples. In comparison, non-exclusive and exclusive patterns have been understood to be of particular significance in investigating foreign language learning outcomes. The situation in assessing the exclusive phonological pattern is, therefore, similar to that of assessing non-exclusive phonological patterns. Hence, we may here demonstrate the exclusive phonological patterns of each group separately: (1) Group 1's exclusive phonological patterns; and (2) Group 2's exclusive phonological patterns.

The profile samples of PROPH of the Monolingual 1 population (Group 1) have shown that the realization of the target phone /l/ (alveolar) as [ɫ] (velarized alveolar) initially, medially, and finally is exclusive to the group concerned, yet non- exclusive to the genders within the same group. We must, however, consider that in many forms of British English, only syllable final /l/ sounds are strongly velarized [ɫ] (Ladefoged, 1982:62).

/l/ ⟶ [l]

$$\begin{bmatrix} +cons \\ +son \\ -high \\ -back \\ -cont \end{bmatrix} \longrightarrow \begin{bmatrix} +cons \\ +son \\ +high \\ +back \\ -cont \end{bmatrix}$$

Also, the realization of the target phone /p/ (voiceless bilabial) as [b] (voiced bilabial) in all positions is exclusive to the Monolingual 1 population (Group 1) but non-exclusive to the genders within the same group. It is apparent that devoicing has not been maintained in producing the target phone /p/ in initial, medial, or final position.

/p/ ⟶ [b]

$$\begin{bmatrix} -voice \\ -son \\ +dist \\ -cont \end{bmatrix} \longrightarrow \begin{bmatrix} +voice \\ -son \\ +dist \\ -cont \end{bmatrix}$$

We have also found that the above target phones /l/ and /p/ were incorrectly realized in clusters. Other phones were also used by the Monolingual 1 population (Group 1, Males and Females) as error realizations; for example, the voiceless alveolar fricative [s] and the voiced alveolar fricative [z] are incorrect realizations of the target phones /θ/ (voiceless dental fricative) and /ð/ (voiced dental fricative) respectively. This pattern of phonological realization, however, illustrates a marked tendency to maintain devoicing and voicing.

/θ/ ⟶ [s]

$$\begin{bmatrix} -nas \\ -voice \\ -strid \\ +cont \\ -lat \end{bmatrix} \longrightarrow \begin{bmatrix} -nas \\ -voice \\ +strid \\ +cont \\ -lat \end{bmatrix}$$

$$/ð/ \longrightarrow [z]$$

$$\begin{bmatrix} -nas \\ +voice \\ -strid \\ +cont \end{bmatrix} \longrightarrow \begin{bmatrix} -nas \\ +voice \\ +strid \\ +cont \end{bmatrix}$$

In a similar vein, the researcher of the present study observed the profile samples of PROPH of the Bilingual population (Group 2). What emerges from the assessment of the phonological patterns are exclusive phonological errors. For example, the target voiceless dental fricative /θ/ was realized as [t], a voiceless alveolar plosive, and the target voiced dental fricative /ð/ was realized as [d], a voiced alveolar plosive in initial, medial, and final syllabic positions.

$$/θ/ \longrightarrow [t]$$

$$\begin{bmatrix} -nas \\ -voice \\ -strid \\ +cont \\ -lat \end{bmatrix} \longrightarrow \begin{bmatrix} -nas \\ -voice \\ -strid \\ -cont \\ -lat \end{bmatrix}$$

$$/ð/ \longrightarrow [d]$$

$$\begin{bmatrix} -nas \\ +voice \\ -strid \\ +cont \\ -lat \end{bmatrix} \longrightarrow \begin{bmatrix} -nas \\ +voice \\ -strid \\ -cont \\ -lat \end{bmatrix}$$

However, these phonological errors are not exclusive to the genders within the group concerned. On the other hand, the assessment of the target phones /θ/ and /ð/ in 2-element clusters has also shown them being realized incorrectly as [t] and [d] respectively. This pattern of phonological realization in both target singleton

and cluster consonants illustrates a marked tendency to maintain devoicing and voicing.

Abstract representations also have an explanatory function. We are able to account for phonological phenomena which on the surface level appear to be irregularities or anomalies but which, at the abstract level, are instances of general processes operating in the interlanguage. These are patterns of substitutional errors which are likely to yield the most relevant information about the nature of the phonological problem.

In this way, a reasonably precise account of the features of Group 1 and Group 2's use of English as a foreign language have been obtained. It should now be possible to interpret the above assessments in relation to the hypotheses formulated earlier in the present study.

5.4.2 Interpretation of Results

In this part of our study we must first briefly remind ourselves of the purpose of profile-construction. The most useful statement of the purpose is offered by Crystal (1982) who defines it as an accurate assessment of P's (patient's/pupil's) performance. The present researcher has been guided by this definition in generating and/or rejecting hypotheses in the fields of language acquisition and learning. It is, therefore, valuable to recognize emphatically the importance of the above mentioned purpose for the interpretation of the results of the present study. Of particular importance in the six stages of the profiling procedure is the assessment and interpretation of the results. These stages are of course not mutually exclusive. In considering their importance in the profiling procedure, we will ask ourselves how we have worked out our own interpretation of the results— the last

stage of the profiling procedure. Our interpretation is or should be concerned with issues that arise in language inquiry; i.e., it is based on our own formulated hypotheses and on some of the language hypotheses in the literature. Although our research is concerned with a highly complex task, it can nevertheless be investigated neurolinguistically and linguistically. What we have attempted to do is therefore in line with this view, because the results have been interpreted from these two perspectives.

For the interpretation of our results, we must bring into focus the fact that the gender variable was ineffective in highlighting exclusive language patterns, as was seen in the section of the Assessment of Results (5.4.1). The linguistic repertoire variable must have a clearly defined impact on the emergence of the exclusive language patterns. Nevertheless, it is clear from the assessment of the results that the linguistic repertoire variable has not operated on all language components. It has profoundly influenced the phonological and the pragmatic components.

5.4.2.1 Interpretation of Results from a Neurolinguistic Point of View

In the introduction we laid emphasis on the premises that underlie our work. These premises can be expected always to contribute to the total scheme of language acquisition/learning researches. For example, Grojean's bilingual/holistic view of bilingualism suggests the merit of the underlying premises:

> *"The bilingual is Not the sum of two complete or incomplete monolinguals; rather, he or she has a unique and specific linguistic configuration. The coexistence and constant interaction of the two languages in the bilingual has produced a different but complete linguistic entity"*
> *(1989:6).*

Our object was not to offer another definition. Instead, we have attempted to present a 'map' which can provide orientation. Our hope has been that we can use this insight to arrive at a coherent view of foreign language learning. The central focus of this section is the development of ideas about language acquisition/learning, and, in this way, to recognize the theoretical issues underlying them. Our study here is centered around two hypotheses and one corollary attached to the second:

Hypothesis 1

Bilinguals use specific operations and strategies in learning a foreign language which differ from those used by monolinguals.

Hypothesis 2

The bilingual's two language systems and the monolingual's one language system (and their various components: syntax, semantics, phonology and pragmatics) are simultaneously active in learning a foreign language.

Corollary:

The potential for language interference increases with the number and specifications of the languages in the linguistic repertoire of foreign language learners. In other words, interference cannot be equally balanced.

In our discussion of the hypotheses concerned we used other neurolinguistic hypotheses as a source for relating them to current theories of second and foreign language acquisition/learning. In doing so, a wide-ranging awareness of foreign language learning theory can be achieved.

The emphasis on the bilingual/holistic view of bilingualism was found to be in harmony with Paradis' (1987) Stage and Revised Stage Hypotheses regarding the

involvement of the cerebral hemispheres in second language acquisition/ learning. The support for these hypotheses comes from evidence of both clinical and non-clinical studies on bilingualism. In spite of the controversial nature of the Stage and the Revised Stage Hypotheses, they imply that:

"laterality differences between the bilingual's two languages will decrease as second language proficiency increases"
(Schneiderman, 1986:236).

We have to recognize that the conceptualization and description of second language competence/proficiency is, therefore, an important step in our study. This does not mean to say that there is a completely satisfactory expression of second language competence/proficiency as a concept. What, then, is the current picture of second language competence/proficiency?

The concept of competence/proficiency in second languages is multifaceted and can be interpreted in several different ways. Second language competence/ proficiency can be considered from the perspectives of: (1) levels of proficiency and (2) components of proficiency. Given the complexity of second language competence/proficiency it would seem more reasonable for our research to consider the ideal goal in second/foreign language acquisition/learning, i.e., native-like competence or proficiency level. Therefore, the following conceptualization and description may serve as a summary of the meagre state of knowledge of the competence/proficiency question:

"In order to develop native-like processing capacity in a language, the learner must first identify and decode or attach meaning to the relevant language stimuli. This is a complex task which involves the simultaneous integration of incoming

language stimuli with previously encountered language data and with knowledge from a number of different cognitive domains. The learner would likely draw on all relevant linguistic cues, as well as on extralinguistic information from the situational/emotional context of the incoming stimuli"
(Schneiderman, 1986:239).

Based on the above definition and assessment of second language competence/proficiency and on the criteria of age and context of second language acquisition, we can say that the bilingual population (Group 2) in the present research has established native-like competence in their second language, namely Arabic. However, the practice among ethnic minorities of using the national language besides their own languages may in fact be due to social pressures of various kinds, and educational policies. A considerable number of enquiries into bilingualism (see Chapter II) have established that it is possible for a bilingual to have as high a level of proficiency in two languages as a native monolingual has in one. For example Beardsmore's (1986:125) presentation of Chomsky's notion of the 'ideal speaker/hearer', which accounts for early simultaneous bilinguals, has greatly enhanced our understanding of the notion of 'native-like competence'. It follows from his argument (see 2.1.5) that early simultaneous bilinguals, as is the case with the Bilingual population in this study, can be considered native-speakers of their second language if the circumstances of its acquisition are identical to those of children acquiring it as their first language. In order to place the assumption that Arabic is the second language of the Bilingual population (Group 2) on a more solid footing, their development of equivalent level of L2 to their L1 level needs support from their second language acquisition process.

The Armenian Schools in Aleppo provide, under the supervision of the Min-

istry of Education in Syria, an excellent opportunity to acquire Arabic as a second language. These are private schools where instruction is in Arabic and Armenian at elementary, preparatory, and secondary levels, with Arabic as the dominant classroom language. The students are taught Armenian history, religious education, and the Armenian language, in Armenian by Armenian teachers exclusively. Other topics are taught in Arabic either by Armenian or Arab teachers and include Arabic history, the Arabic language, mathematics, physics, chemistry, biology, geography, political science, gymnastics, and music. For the Bilingual population (Group 2), Armenian is the first language, spoken at home, outside the home and in school. Arabic is acquired outside the home in a natural milieu and in school. This is to say that the Bilingual population (Group 2) had the possibility of acquiring two languages both in informal environments and in formal teaching situations. It is, therefore, normal to find native-like competence in the performance of the Bilingual population (Group 2) in Arabic because the recognition of Arabic as the national as well as the educational language in Syria has led to the issuing of a decree that states that to fail the Arabic language as a subject in the final exams results in failing the class. This does not mean to say that these exams are either exclusive or different for non-Arab students. No doubt, this educational policy regarding the use of Arabic is in harmony with the Pan-Arabic ideology of Arabizing and assimilating the ethnic minorities in Syria. As we saw earlier in (1.5.2), the Arabic language plays a major unifying role and the government does not identify individuals with ethnic minorities but rather as members of religious communities. Besides, a large part of the Armenian community wishes to cooperate with the majority, advocating a limited extent of assimilation while at the same time stressing the maintenance of the Armenian identity, as is evident from their schooling policies.

Now that we have traced the establishment of native-like competence in Group 2's second language, we can visualize the implication of the Stage and the Revised Stage Hypotheses (Paradis, 1987). In other words, the researcher of the present study believes that there are no laterality differences between the bilingual's first and second languages, namely Armenian and Arabic. It, therefore, seems reasonable to assume that the two languages concerned are represented in the same cerebral regions but may not be served by exactly the same neuronal circuits. In the light of this understanding of second language lateralization, we set out to interpret our results with regard to hypotheses 1 and 2.

It is necessary again to mention that the results of this enquiry showed that the gender variable is ineffective. However, on the question whether the linguistic repertoire variable is effective we must study directly the exclusive language patterns that have emerged. In essence then, in order to give sound interpretations of our results, we need a deliberate emphasis on the exclusive language patterns. The implication is that the exclusive language patterns are considered the bases for the discussion of the hypotheses in the present study. Nevertheless, the exclusive language patterns cannot be expected to present us with definite interpretations unless we identify their nature. Focusing on the exclusive language patterns, which are highlighted in (5.4.1), we can identify evidence for the phenomenon of interference in foreign language learning. These are examples of phonological and pragmatic interferences from the linguistic repertoire of the foreign language learners. What emerges from these examples of language interference is a conviction that the linguistic repertoire variable is effective. With this understanding in mind we will discuss the hypotheses concerned from a few crucial neurolinguistic points of view.

A basic question to ask is in what way the exclusive language patterns (i.e.

examples of language interference) provide the foundation for the discussion of our hypotheses. These patterns cannot be expected to present us with definite interpretations, but they can offer us ideas on language as a protection against oversimplification. In short, a number of generalizations can be made from the findings of our study. Firstly, the subjects of Group 1 and Group 2 did not use different operations and strategies in their target language/English performance. This is supported by the absence of exclusive syntactic and semantic patterns in the interlanguages of the Monolingual 1 and Bilingual populations (Group 1 and Group 2). Secondly, as stated earlier, it appears that there is a strong tendency for interference of the phonological and pragmatic aspects of language. In other words, Group 1 and Group 2 subjects seem to have adopted the same operations and strategies in learning a foreign language at a specific point on Tarone's (1983) 'Capability Continuum' of interlanguage speech production. Our data, therefore, do not show operations and strategies unique to the Bilingual population (Group 2) in the present study.

Before discussing the second generalization which is built upon the notion of language dominance in this part of the research, we need to present the related views of language dominance and their implications in our study. One of these views is based on language proficiency (Crystal, 1987a). Accordingly, a language or a language variety is likely to be regarded as more competent and dominant if it has been spoken fluently, quickly, and with few hesitations. Brown et al (1968), seeking perhaps a sociolinguistic approach to language dominance, viewed social closeness and intimacy as factors resulting in dominant languages or language varieties. It is, therefore, recognized that sociolinguistic identity bears directly on the emergence of a dominant language or language variety.

Another fruitful line of enquiry was prompted by a number of psychological researches. Guiora et al (1990) and Taylor et al (1971), for example, drew attention to the psychological concept of 'language ego' in relation to the notion of 'language dominance'. They recognized that among the different manifestations of self-representation, such as family, religion, nation, and culture, by far the most powerful manifestation is native language. In other words, native language is one of the 'vital rings' of identity which affirms our uniqueness (Guiora et al, 1990:26).

From the overview of the Syrian society in (1.5.2.2), we can argue that the Armenian language is dominant in the Bilingual population (Group 2). It is their native language which: (1) is spoken fluently and quickly, (2) maintains their sociolinguistic identity, and (3) affirms their psychological identity/their 'Armenianness'. In pursuing these implications of language dominance in the Monolingual 1 population (Group 1) we must remind ourselves that, for the present, neither Modern Standard Arabic (MSA) nor any regional variety of Arabic have yet succeeded in expressing their psychological identity. However, it appears that it is the regional variety of Arabic in Aleppo which meets the sociolinguistic and language proficiency criteria of language dominance, i.e. as the sociolinguistic and language proficiency criteria merge one would expect the regional variety of Arabic in Aleppo to be dominant.

Therefore, a basic question to ask is why the regional variety of Arabic has not been treated as a variable from the start? In this case, the researcher has deliberately avoided the study of the language in the monolingual repertoire as a composite phenomenon. That is to illustrate the force of the argument that a language is constituted by a range of varieties and styles. In our view, the researcher's deliberate avoidance to treat the regional Arabic as a variable could

lead to a systematic awareness of the extent and complexity of language variety which, in turn, opposes the long-standing interpretations of language as a single, homogeneous entity.

A second generalization is that the linguistic repertoires of both populations (Group 1 and Group 2) are not completely or simultaneously active during interlanguage speech production. Evidence for this is given by the patterns of interference in our results which reveal two distinct patterns of language processing. Nevertheless, the subjects in both groups are not differentially affected by the language of the interfering channel, namely English. Firstly, our Group 1 and Group 2 subjects show in their interference patterns an indication of the direction of interference. It occurs exclusively from the dominant language or the dominant variety of a language to the target language/ English. The interference patterns in our results indicate a significant influence of the regional variety of Arabic (the dominant variety of Arabic in Aleppo) and of Armenian (the dominant language in Group 2's linguistic repertoire) on the interlanguage speech productions of Group 1 and Group 2 respectively. The results obtained in this study are consistent with the results of other studies regarding the occurrence of interference between the bilingual's two languages (e.g. Mägiste, 1984b). Accordingly, language interference occurs in a particular direction, from the dominant to the non-dominant language in natural as well as experimental contexts. Similarly, the evidence across our interference patterns suggests that interference is determined by language dominance.

Secondly, on the question of which aspects are expected to show language interference, it turns out, as we have seen earlier, to be the phonological and the pragmatic components of the dominant language or the dominant variety of a language. One way to ascertain whether the phonological and the pragmatic inter-

ference patterns are determined by language dominance is to study the patterns concerned in comparison with the phonological and the pragmatic patterns that the populations are acquainted with. For example, the velarized realization of /l/ ⟶ [ɫ] and the substitution of /θ/ and /ð/ for [s] and [z] in all positions and in clusters of Group 1 (the Monolingual 1 population) are instances of interference from the regional dominant variety of Arabic and not from the non-dominant Modern Standard Arabic (MSA), whereas the substitution of [b] for /p/ can be attributed to the interference of either the regional or the standard variety of Arabic. These examples of interference illustrate the strong influence of the regional phonological system of Arabic on the interlanguage speech production of Group 1. This is due to the fact that, on the one hand, the regional phonological system does not include the phones /θ/ and /ð/; they are represented as [s] and [z]. On the other hand, it contains the velarized [ɫ] as a free variation of /l/, contrary to the phonological system of MSA. It must, however, be added here that the avoidance of the Bilingual population (Group 2) to use the velarized [ɫ] (see Table 5.14), particularly in syllable final /l/ sounds, can indicate either that interference has not happened from the non-dominant language (Arabic) or the target sound [ɫ] has not been learned by the group in question.

In our view, the phonological interference findings in the speech productions of the Bilingual population (Group 2) are similar to those of the Monolingual 1 population (Group 1) with regard to the direction of interference. It is interesting to note that the realizations of the phones /θ/ and /ð/ as [t] and [d] respectively can be attributed to interference from the Armenian language (the dominant language) rather than from Arabic (the non-dominant language). Apparently, Group 2's incorrect realizations of the phones /θ/ and /ð/ are not identical with Group

1's incorrect realizations of the same phones. The evidence from these substitutions, therefore, suggests that the phonological interference in the results of the Bilingual population (Group 2) is determined by the dominance of the Armenian phonological system. However, despite the fact that the incorrect realizations of the target phones in question in both populations are not identical, it is evident that they share the phonological features of devoicing and voicing.

We now turn to the identification of the pragmatic patterns of interference in the results of this study. Despite the fact that language dominance is the common factor of language interference, each population has revealed it differently in their interlanguage speech production. The results, as summarized in Table (5.8), show that the exclusive use of the Arabic comment clause يعني/yaʕni= 'it means'/ and 'empty' there by the Monolingual 1 population (Group 1) highlight the impact of the regional variety of Arabic on their interlanguage speech production but not the impact of MSA. The existence of these pragmatic features as patterns of interference is due to the fact that they have specific discourse functions in the involved regional variety of Arabic. It is obvious, therefore, that they are more common (i.e. show a high degree of automaticity) than their equivalent patterns in MSA, whereas, in the results of the Bilingual population (Group 2), we find that the pragmatic pattern of interference is different. It is interesting to note that the subjects of the Bilingual population (Group 2) have used exclusively the translated version of the Armenian comment clause /intʃ bədi esem= 'what to say'/ in their interlanguage speech production. Although the present findings of the pragmatic patterns of interference of Group 1 and Group 2 seem different, the direction of interference in both groups is consistent— from the dominant language or variety of a language to the non-dominant target language.

As we have stated earlier, the purpose of highlighting the patterns of interference is to find out if there are parallels between our findings and our formulated hypotheses. In conclusion, the present findings in the interlanguage speech productions of Group 1 and Group 2 reveal that only the phonological and pragmatic components of the dominant language or the dominant variety of a language in the linguistic repertoires of the Bilingual and Monolingual 1 populations are simultaneously active in learning a foreign language. Furthermore, an interesting observation concerning the Corollary of Hypothesis 2 is that the potential for language interference does not increase with the number and specifications of the languages in the linguistic repertoire of foreign language learners.

In addition, the present study was undertaken to explore further neurological and neurolinguistic issues which offer support and a sounder understanding of our findings in this study:

(i) Our Results and Neurology

It will prove helpful at this point to introduce some of the general neural features before embarking upon the study of the mechanism of the complex human nervous system. We should also mention that the human nervous system is the most widely investigated and least well understood of systems. It is concerned with every aspect of our lives, physical, intellectual and cultural. Therefore, there are several different disciplines, methodologies, motivations and persuasions involved in its study. For our present purposes, we shall explore the plasticity of the synapses as an aspect of the mechanism of the human nervous system.

Synapses are the specialized intercellular contact points between the neurons or the nerve cells which are essentially excitable cells. The common characteristic of

neurons is that they are able to receive, conduct and transmit coded information. It was noted that the information is coded in terms of transient electrochemical changes in the plasma membranes of the neurons. In mammals, synapses are capable of chemical neurotransmission which occurs in one direction only. It involves:

"the release of transmitters associated with, or contained within, the synaptic vesicles, into the synaptic cleft. Here, the transmitter causes changes in potential at the postsynaptic surface, tending to depolarize it in the case of excitatory synapses, or to hyerpolarize the membrane in inhibitory ones"
(Gray, 1973:775).

Accordingly, the synapses gradually mature into their fully differentiated structure, and can be recruited for transmission and dispersed when redundant. It is important to know that some theories of memory are compatible with the above understanding of the development and change of synapses. Indeed, memory requires synapses to be subject to modification because the frequency of their use establishes preferential conduction pathways in the brain (Gray, 1973). The implication that emerges from a neurological theory such as this is in support of the notion of language dominance in applied linguistics. What this indicates, however, is that it implicitly supports the issues of automaticity and interference in language acquisition/learning as being strongly related to the notion of language dominance. It is important to mention here that the relation between automaticity and interference is very strong, and, therefore, it is regularly emphasized that:

"...both are determined by training. Training increases automaticity and diminishes interference. In any practical situation, it could be argued

that automaticity and interference refer to the same thing"

(Mägiste, 1986:106).

It should now be clear that the patterns of interference in our results, which significantly indicate the direction of interference from the dominant language or the dominant variety of a language to the target language (TL), can be interpreted from the above neurological viewpoint. It thus seems that the frequent use of the synapses, correlated of course with the frequent use of the regional Arabic by the Monolingual 1 population (Group 1) and Armenian by the Bilingual population (Group 2), has established preferential conduction pathways in their brains.

(ii) Our Results and the General Language Monitoring Device (GLMD)

To account for the emergence of the interference patterns in our results, we appealed to the theory of 'General Language Monitoring Device'. It is generally agreed that the device can be characterized as very rapid, flexible and automatic (Posner and Snyder, 1975). As Grosjean and Soares (1986) have pointed out, the function of the device is to indicate which language is being spoken by using prosodic, segmental, syntactic, semantic and pragmatic information. In this way, it indicates the interference, the code-switching and the borrowing constraints associated with the languages in question. The important consideration, however, is that the device does not participate in processing language input. Grosjean et al (1986) interpret its function in the following way: the device directs the information to the processors of the appropriate language/s. In fact, these processors are responsible for higher levels of language processing. In other words, there are two-stage procedures in language processing operations: (1) directing the information and (2) processing the information. Neurologically speaking, the distinction between these two stages is not rigid and they can be visualized as a continuum.

At one extreme we find that the device actively directs the information, and at the other we find the language processors are involved in the operations of language processing. What is important for the above interpretation of the General Language Monitoring Device is that the emergence of the patterns of interference is part of the latter rather than the former stage. In other words, we are saying that it is the second stage and not the first one, which is expected to reflect the established preferential conduction pathways in the brain.

(iii) Our Results and Hemispheric Specialization

In exploring this area we are bound to consider the roles of the cerebral hemispheres which have created a stir in language acquisition and learning theories. The debates on the hemispheric roles are based on different neurolinguistic interpretations. One of the most debated issues, as we saw in chapter (II), is the notion of hemispheric equipotentiality which stems from a belief in cerebral hemispheric equivalence. In spite of the fact that this assumption has been regarded as controversial, it is not surprising to find that it implies that the roles of the cerebral hemispheres are crucial and not subsidiary in developing linguistic competence. For our purposes, it is necessary to consider their roles in second language acquisition/learning.

Without going into the differences between discussions and studies on the roles of the hemispheres which have been outlined in chapter (II), we can identify the general awareness of heuristic (holistic) and algorithmic (analytic) procedures involved in analysing language stimuli. We can, therefore, visualize that the dissociation between heuristic (holistic) and algorithmic (analytic) procedures is determined by anatomical and functional asymmetries of the cerebral hemispheres. It must, however, be stressed that the concept of differential language procedures linked with each cerebral hemisphere can provide a framework for a

map of essential factors to be taken into account in interpreting second language acquisition/learning.

The results of the neurolinguistic enquiries have presented us with a simple and unified picture of the inherent roles of the cerebral hemispheres with regard to language processing. Different researches (see chapter II) have revealed that the left hemisphere is the most efficient in the analytical- sequential (algorithmic) mode of language functioning; whereas the right hemisphere is ideally suited for the holistic-parallel (heuristic) mode of language functioning. Therein lies the justification for early language acquirers/learners in reliance upon the heuristic strategy of the right hemisphere in order to process the new data of the target language(TL). There is often a tacit assumption in these studies on this particular issue that once a language is acquired/learned, the left hemisphere will take over the functions of the right one. The above implication, however, reflects the view expressed in studies on the acquisition/learning of pragmatics that the decoding of speech language stimuli of early acquirers/learners does not depend on syntactic rules but rather on the right hemisphere's pragmatic, contextual and emotive abilities. In essence then, the general inference of all these studies is no longer in doubt; the right hemisphere maintains a great and important role in analyzing the language stimuli pragmatically.

A basic question to ask is how this framework of language processing accounts for the phenomenon of interference in our results. In attempting to link hemispheric specialization with the phenomenon of language interference, we suggest that we look again into the notion of automaticity. Studies on automaticity suggest that there are levels of automaticity which seem to be mainly dependent upon practice. In other words, practice is the main source of automaticity and perfor-

mance improvement. If it is the case that interference diminishes with the increase of automaticity, it would be understandable then that the patterns of interference in our results indicate a lower level of automaticity in relation with the target language/English. According to this view, we can say that English, as a foreign target language, is in the early stages of the learning process. It is evident, then, that the left hemisphere has not yet taken over the functions of the right one. The latter, therefore, maintains its role in analyzing the foreign target language stimuli in the holistic-parallel (heuristic) mode. This interpretation is encouraging. However, we must not be blind to the factors under which greater participation of the right hemisphere occurs. Our goal in this part of the present chapter will be to consider those factors, which are introduced as hypotheses by Paradis (1987) (see chapter II), in relation to our results in this study. Nevertheless, it is hardly imaginable that these factors are mutually exclusive; and so it is not surprising to find that the participation of the right hemisphere is influenced by a number of different factors/hypotheses:

(a) The Age Hypothesis/Factor

The age hypothesis/factor stresses the association of language lateralization with maturity levels. It assumes that any language learned after the optimal age/critical period is less lateralized. In spite of the fact that the subjects of this study started learning the target language/English at an early age, the results highlighted in their speech samples fail to support the critical-period hypothesis. The results of the present study indicate that English has not been lateralized due to the fact that the left cerebral hemisphere has not taken over the functions of the right one.

(b) The Stage Hypothesis/Factor

What emerges from this hypothesis is that the learner's degree of proficiency in

L2 influences its left lateralization. On the basis of this understanding, then, we find that the results of this study can provide clear evidence which support the Stage Hypothesis/Factor. It is, in our view, the subjects' proficiency level in the target language which influenced the greater participation of the right cerebral hemisphere, as we have seen earlier.

(c) The Revised Stage Hypothesis/Factor

The Revised Stage Hypothesis/Factor has laid emphasis on the notion of recency of language acquisition or learning. Recency is considered as a factor influencing the participation of the right hemisphere. This hypothesis suggests that the participation of the right hemisphere increases at the early stages of language acquisition/learning in a natural environment and not through formal learning methods. In other words, this hypothesis proposes that the right hemispheres of our subjects have not participated in the process of learning English since it has occurred in a formal environment. In view of this interpretation it is necessary to remind ourselves of the evidence from our results which do not support the hypothesis/factor in question because it reflects right hemisphere participation.

(d) The Context Hypothesis/Factor

Like the Revised Stage Hypothesis/Factor, the view of the Context Hypothesis/Factor in terms of the participation of the right hemisphere is linked to the social context of language acquisition/learning. The social context is principally a powerful influence on the roles of the cerebral hemispheres in language processing. Accordingly, in language acquisition context greater participation of the right hemisphere is expected than in language learning context. Making the distinction between the participation of the cerebral hemisphere relative to the conditions of learning has not been supported by the results of the present study. In spite of the

fact that English has been learned in a formal educational environment and not in an acquisition context, the present results indicate that the right hemisphere in its holistic- parallel (heuristic) mode is responsible for handling the target language/English.

(e) The Modality Hypothesis/Factor

A few other attempts have been made to relate the right hemisphere's participation in language processing to the 'modalities' of L2 acquisition/learning. The emphasis has, thus, shifted from the context to the modalities of L2 acquisition/learning. They clearly indicate that reading and writing lead to greater participation of the left hemisphere; whereas L2 acquisition/ learning through listening leads to greater participation of the right hemisphere. What is of great value in this distinction is (1) that this hypothesis/factor justifies the Context Hypothesis/Factor, and (2) that it tackles the notion of 'Modality' from a neurolinguistic perspective. As we saw previously, the results have not supported the Context Hypothesis/Factor due to the right hemisphere's participation in the context of language learning. From the point of view of our discussion the results do not support the Modality Hypothesis/Factor either for the same reason. In other words, the right hemisphere is involved in language processing despite the fact that the learning of the target language/English has taken place through the 'reading' and 'writing' modalities.

(f) The Language Specific Hypothesis/Factor

In attempting to link language characteristics with hemispheric specializations, Paradis (1987) suggests that the right hemisphere participates, (1) in appositional and not in propositional modes of thought; (2) in processing languages which create perceptual fields; (3) in processing ideographical languages; (4) in processing vowels and tones of non-Indo-European languages; and (5) in processing languages with

left-to-right directionality of scripts (left visual field). On the basis of Paradis' review, we find that the target language/English in the present study does not fulfil all the alleged language characteristics which influence greater participation of the right hemisphere. As can be seen from the above characteristics, it is only the presence of the directionality characteristic of the English scripts (left to right/left visual field) which has influenced the participation of the right hemisphere.

(g) The Structural Distance Hypothesis/Factor

A few attempts have been made to relate the participation of the right hemisphere to the idea of different linguistic structures of languages. According to Paradis (1987), studies on language structural distance in bilinguals have made it clear that the greater participation of the right hemisphere occurs with languages which are structurally different rather than in structurally close languages. Without going into the linguistic structural differences of the languages in question (Arabic, Armenian, and English), the results we have drawn attention to so far, with regard to the participation of the right hemisphere in processing English, are in support of the Structural Distance Hypothesis/Factor. It is possible, on the basis of the above understanding of hemispheric involvement, to say that the structural differences between Arabic and English as well as between Armenian and English explain the right hemisphere's participation in processing English (the target language).

In concluding this part of our study, it is interesting to reflect that the relationship between language acquisition/learning and neurolinguistics has developed differently from that between language acquisition/learning and linguistics. Neurolinguists have, however, recognized the importance of hypotheses and theories which relate language processing in language acquisition/learning to the anatomy of the brain and its innate functions. Some linguists and educational linguists have

become aware of this need and have moved into the arena of neurolinguistics.

Having interpreted our results from a neurolinguistic perspective, it is also important to interpret them from the viewpoint of linguistics.

5.4.2.2 Interpretation of Results from a Linguistic Point of View

To begin with, it will be useful to give a brief overview of current thinking regarding the nature of the 'Interlanguage' theory. In recent decades the focus of theories concerning second language acquisition and foreign language learning underlying the 'Interlanguage' theory has shifted from so called bottom-up models and top-down models to models allowing for dynamic interaction on the inductive-deductive continuum. Such models are generally considered now to be adequate because they account for a number of important phenomena associated with the 'Interlanguage' theory. This means that theories of second language acquisition and foreign language learning can be placed along a continuum which highlights their degree of 'deductivity' and 'inductivity'. At the same time, the general consensus among researchers appears to be that the 'Interlanguage' theory can be related to the inductive side of the continuum.

The studies reported in Chapter (II) looked at 'Interlanguage' as a linguistic phenomenon conceptualized with various analytical prescriptions. The general conclusion from these studies is that it can be a source for systematic thinking about second/foreign language acquisition/learning. In our study we used the 'Interlanguage' theory to investigate our third hypothesis:

Hypothesis 3

The linguistic repertoire of the foreign language learner has a variable effect on the learner's speech production.

The assumptions underlying this hypothesis are pieces of information available to us via a number of channels; one of these channels concerns the variability of interlanguage. Despite the fact that an understanding of these channels is necessary for a complete understanding of the theory of 'Interlanguage', it is assumed that the source of information regarding interlanguage variability is sufficient for the purpose attached to the above mentioned hypothesis.

The issue under consideration in this section concerns the systematicity and variability of interlanguage. Our study took these notions into account in the generation of the hypothesis in question. With this framework, our approach to the issue has been guided by the proposition that the interlanguage studies are monolingually orientated. An additional implication of this stance is that primary consideration has been given to the first language as L1 and not as a linguistic repertoire, thereby affecting both explanation and isolation of the interlanguage phenomenon unique to monolingualism. In other words, there is a suggestion that, structurally, interlanguage has an intermediate nature between the first language and the target language. Therefore, the onus is on the present researcher to demonstrate that the 'Interlanguage' theory specifically requires an explanation from the linguistic repertoire point of view rather than exclusively from L1 perspective.

The notions of systematicity and variability are central to any discussion of interlanguage. The argument of researchers is that a combination of variables produces the distinctiveness of the interlanguage. It is important to note that in the literature on interlanguage we find references to the influential variables which resulted in the development of the theory of 'Interlanguage'. A number of researchers in the domain of second/foreign language acquisition/learning (e.g. Selinker et al 1975; Adjemian, 1976; Corder, 1973) conceive of interlanguage as

systematic for various reasons indicated in chapter II, whereas, according to Tarone (1979; 1983; 1985; 1988), the notion of interlanguage requires reinterpretation due to the fact that the notion of systematicity in interlanguage is invalid. In Tarone's view, the linguistic context and the data elicitation task have a variable effect on the language learner's output. Nevertheless, these studies on the systematicity of interlanguage are of interest in their own right, but they also take on an added importance when they are related to our study on the linguistic repertoire variable. In what follows, we examine the impact that the linguistic repertoire has on the systematicity of interlanguage.

We hypothesized above that the linguistic repertoire of the foreign language learner has a variable effect on the learner's interlanguage production. Does this mean that Tarone's suggested variables (the linguistic context and the data elicitation task) do not affect the systematicity of interlanguage? In order to answer this question, we do not need to obtain empirical evidence on the influence of these variables on the results of the present study. We should note at this point that among the variables which can affect the systematicity of interlanguage, Tarone's variables will not have different weightings attached to them. To illustrate this point, we need to take into account the methodology used in this research (see chapter III) . The methodology chapter identifies the linguistic context for data elicitation as a formal school context, and the task for interlanguage data elicitation as interviewing. This means that both populations of the present study (Group 1 and Group 2) share the same linguistic context and task for interlanguage data elicitation. Accordingly, Tarone's variables (the linguistic context and data elicitation task) have been controlled in the present study, and as such they have lost the characteristic of being variables. We are, therefore, especially interested in

investigating the impact of the linguistic repertoire variable on our learners' interlanguage speech production. Yet, we do not claim that Tarone's sociolinguistic dimension, which is added to the linguistic perspective of interlanguage, should not be recognized. Indeed, we can envisage other interlanguage studies, which have different social contexts, adopting Tarone's hypothesis and which would therefore have a bearing on the variability of the interlanguage speech production.

Turning to our hypothesis that interlanguage varies with the linguistic repertoire, it is necessary to suggest some approaches which will enable us to interpret our results systematically.

5.4.2.3 Our Results and the Role of the Linguistic Repertoire

It is clear from the discussion of the role of L1 in chapter (II) that process-orientated researches on transfer proved more adequate than the product-orientated ones. The specific distinguishing feature of process-orientated researches on transfer is that different processes are involved in the developmental sequences of second/foreign language acquisition/learning as a result of structural differences between L1 and the target language. In considering interlanguage variability in our results, we will look at the interference patterns in the results concerned. We will first discuss the possible relevance of the interference patterns to notions of the theory of 'Interlanguage'.

We have shown in (5.2.2) that there is a strong tendency towards interference in the phonological and the pragmatic aspects of language. We have also shown that the evidence across our interference patterns suggests that interference is determined by language dominance. It should be added that the interlanguage data of the Monolingual 1 and Bilingual populations (Group 1 and Group 2) demon-

strate clearly phonological and pragmatic intra- and inter-variability. However, rather than confirming the intra- and inter-variability of the interlanguage speech productions of the Monolingual 1 and Bilingual populations (Group 1 and Group 2) as highlighted in the patterns of interference in our results, we are interested here in examining the nature of the interference patterns from the point of view of process-orientation. The criterial processes which govern interference clearly demonstrate a contrast between the patterns of interference in the results of the Monolingual 1 (Group 1) with those of the Bilingual population (Group 2). Although the results reflect shared operations and strategies in learning English as a foreign language by Group 1 and Group 2 at a specific point on Tarone's (1983) interlanguage 'Capability Continuum', the presence or absence of systematicity in their interlanguage speech productions is critical. Specifically, do the patterns of interference indicate interlanguage systematicity? The picture is complicated by the fact that the present study investigates the interlanguage of two populations with different linguistic repertoires.

A number of linguistic generalizations can be drawn from the findings of our study. From the point of view of product-orientation, we have seen above that there are two distinct patterns of interlanguage variability: intra-variability and inter-variability. This is shown by the presence of different language features within the interlanguage speech productions of each group and between the interlanguage speech productions of both groups. It should also be considered whether our data also indicate variability in interlanguage process-orientatedly. In attempting to examine the notion of variability in interlanguage from the point of view of process-orientation, we have considered the interference patterns in our results. Indeed, the reason for relying upon examples of language interference to investigate inter-

language variability is that, on the one hand, the phenomenon of language transfer is more adequately studied, in the literature of interlanguage studies, as a process, rather than as a product. On the other hand, the present study found remarkable exclusive interference patterns in the interlanguage speech productions of Group 1 and Group 2. This finding suggests the existence of particular relations between exclusive interference surface patterns and underlying processes. As stated earlier, the patterns of interference in our results suggest that two underlying processes are involved in the process of language interference: (1) the direction of interference which is determined by language dominance; and (2) the sensitivity of interference which is associated with the phonological and the pragmatic language components. This is, of course, supported by the absence of any exclusive interference patterns from the non-dominant languages. However, we are especially interested in those features because they indicate that both populations (Group 1 and Group 2) do not engage in separate modes of processing the target language/English. On the contrary, they appear to have used a unitary form of language processing. Therefore, in terms of process-orientation, our finding reveals intra- and inter-systematicity in the interlanguage speech productions of the populations in question.

The present findings suggest that the performance of the Monolingual 1 population (Group 1) in their foreign language/English is comparable to that of their Bilingual counterparts in that language. Where differences occur, these point to the impact of certain dominant language components in which monolinguals show different exclusive patterns from the bilinguals. The language dominance-specificity and language component-specificity in the patterns of interference in our results uncovered the underlying systematicity of interlanguage from a process-orientated perspective. From the above, it should be apparent that certain aspects of the

dominant language or variety of a language in the linguistic repertoire of a foreign language learner has a variable effect on the learner's interlanguage speech production product- orientatedly but not process-orientatedly. Corroborative evidence for greater emphasis on the systematicity of interlanguage from a process viewpoint rather than from a product viewpoint per se was offered by Tarone (1983) and Ellis (1985a). These enquiries made it possible to show that interlanguages are systematically variable like any other languages. In the light of this understanding of systematic variation of interlanguage, the instability of the learner's interlanguage is regarded as inevitable in the process of second/foreign language acquisition/learning (Ellis, 1985a). However, the results of our study with regard to the variability and systematicity issues are interpreted as follows: The data of the present study suggests that the primary factor in the intra- and inter-variability of interlanguage is the linguistic repertoire. On the other hand, the study provides clear evidence that there is interlanguage intra- and inter-systematicity if we account for the intra- and inter-variability of interlanguage from the point of view of process-orientation.

5.4.2.4 Our Results and the Notion of 'Markedness'

The growing importance of the notion of 'markedness' in interlanguage studies forms part of a broad trend of extending, modernizing, and diversifying the study of language acquisition and learning. The term 'markedness' is applied to:

"an analytic principle in LINGUISTICS whereby pairs of linguistic FEATURES, are given different values of POSITIVE (marked) and NEUTRAL or NEGATIVE (unmarked)"
(Crystal, 1986:188).

That is why the above distinction generally refers to the presence versus the absence of a particular linguistic feature. Moreover, this orientation has direct bearing on the use of the term deep/underlying level in general terms without commitment to a specific interpretation in terms of transformational grammar.

The interest in the notion of 'markedness' is reflected in the large number of interlanguage studies (e.g. Kellerman 1979, 1983; Gass 1979; Jordens 1977; and Rutherford 1982). In the course of their enquiries, they discovered that the learner's perception of the degree of similarity between L1 and TL could serve as a basis for the occurrence of transfer. According to Kellerman's account, unmarked forms will be potentially more transferable than marked ones (1979:53–54). It is noteworthy, therefore, that in the results of our study the interference patterns indicate the learner's perception of the degree of markedness of the dominant-language/variety of a language structure. Nevertheless, the picture is further complicated by the fact that the interference patterns have tended to occur within a single direction: from the phonological and pragmatic aspects of the dominant language/variety of a language to the target language(TL). In short, if we do not want to oversimplify this finding unduly, we must consider a different strand of interpretation. It would be reasonable for us to regard what the underlying level of the surface interference patterns has to offer about 'markedness'. From the point of view of process-orientation, this level provides information which enables us to relate the interference patterns, which have different surface forms, to the same underlying cognitive process. These indications are sufficient to suggest that the learners' awareness of the degrees of markedness of the dominant language/variety of a language in the present study governs the surface forms exclusively. In other words, there appears to be a close link between the learner's perception of the

degree of markedness and his/her surface learning outcomes.

5.4.2.5 Our Results and the Natural Order Hypothesis

Another fruitful line of enquiry was prompted by a number of researches which drew attention to the parallelism between the development of ILs and natural languages. As was pointed out in chapter II, researchers have tried to find explanations for the idealization of interlanguage linguistically like any natural languages. They recognized that various language features, such as permeability, systematicity, variability, context-sensitivity, and so on, enter into the formation of the concept of interlanguage as a natural language. Another group of studies was occupied with the notion of natural order/ developmental sequence in L2 acquisition/learning. These studies (e.g. Dulay and Burt, 1973, 1974b; Krashen, 1985; Brown, 1973) attempted to reveal that second/foreign language acquisition/learning, like first language acquisition, is a creative process:

"The steps and sequences in second language learning, they claimed, are universal and have the same regularities that one can find in first language acquisition" (Stern 1984:330-331).

It is clear from the literature on the Natural Order Hypothesis in interlanguage studies that, besides the recognition of interlanguage as a natural language, there is parallelism between first language acquisition and second/foreign language acquisition/learning. As in the case of our study, it is not possible to give definite and exhaustive evidence in support of the hypothesis in question. This is due to the difficulty of comparing the interlanguage speech productions of our subjects with the acquisitional sequence of English as a first language. In fact, in this study we have turned our attention to one direction, that is, to the cross-sectional study of

language learning. This method contrasts with a longitudinal study which follows the course of language learning over a period of time. Furthermore, our study has not been confined to the assessment of specific English interlanguage features of our learners but to their whole interlanguage speech productions. These indications are sufficient to suggest the difficulty of providing comprehensive evidence either to support or to refute the Natural Order Hypothesis. This difficulty, of course, does not suggest that our results are inconsistent with those in the literature. We can, however, identify in our results evidence for similarity in the developmental sequence of Group 1 and Group 2 as foreign-language learners of English regardless of their linguistic repertoire at a specific point on Tarone's (1983) 'Capability Continuum'.

5.4.3 Summary

Until recently, the relationship between language acquisition/learning and neurology was viewed almost exclusively in terms of analyzing language disability. Nevertheless, the task is never of simple analysis alone, and more recently the need for direct neurological studies of second/foreign language acquisition/learning has been recognized. As a result a more reciprocal relationship between neurology and language pedagogy has developed.

The primary aims of this chapter are to assess the results obtained and interpret them in neurolinguistic and linguistic terms. The results which we have assessed appear to support the following conclusions. First, the results from the Monolingual 1 and Bilingual populations (Group 1 and Group 2) suggest that the direction of interference is from the dominant to the target language (TL). Secondly, when the relationship between the interference patterns and the language

components is considered, the results indicate that phonology and pragmatics determine the boundaries of interference. Thirdly, with the results in question we have uncovered an important difference between the surface and the deep levels of the interference patterns. It is clear that interlanguage variability is connected exclusively with the surface form rather than with the deep structure.

Essentially, our interpretation of the results has neurolinguistic and linguistic implications. Therefore, the present chapter throws light on neurolinguistic and linguistic theories and hypotheses, old and new, in language acquisition/learning, suggesting that they could be supported or criticized by our findings.

Chapter VI

Conclusion

The increasing language heterogeneity of populations in modern societies is the reason why language research has become more important. It is not surprising, therefore, to find that language researchers have been led to a preoccupation with a number of disciplines which are all considered of equal importance. However, in the present study our object is not to offer pedagogical formulae or prescriptions to language teachers who have been constantly bombarded with a surfeit of research results, advice, directions, and scientific evidence. Instead, they can develop their own judgement according to what has been presented in this study.

In this study we have turned our attention to different fields which jointly perform essential and mutually supporting functions in establishing a basis for language research. If any conclusion stands out from this study it is the multidisciplinary and multilevel character of language researching. Our study, however, is centered around a few simple but basic issues in:

- Learner Factors;
- Bilingualism; and
- Interlanguage.

Although we have investigated these issues, it has never been suggested that they could be investigated once and for all with any sense of finality. Rather, they are the kinds of issues that should be investigated repeatedly if we want to deal with

them in fresh and appropriate ways and if we want to avoid stagnation. In spite of this research effort to cover a variety of issues, certain issues have been taken up more vigorously than others which can claim to be no less important.

These different chapters provide insights into the different aspects of foreign language learning. Our results, for instance, with the Monolingual 1 and Bilingual populations (Group 1 and Group 2) have failed to show that learning a third language is easier than a second language. On the contrary, the results appear to disagree with the common notion in the literature and in the popular mind that people who become bilingual at an early stage will later have greater facility in picking up a third language (e.g. Albert & Obler, 1978). In this case, some basic questions arise: (1) What are the characteristics of a bilingual? and (2) What are the characteristics of a monolingual? In spite of the fact that the definition and identification of bilingualism has constituted a first and important stage in the procedures of investigating the phenomena of bilingualism, the first question has no clear-cut answer in the literature (See Chapter II). To overcome the lack of an adequate and exhaustive definition of bilingualism, we have, therefore, adopted Hornby's perspective of bilingualism which recognizes that:

"bilingualism is not an all-or-none property, but is an individual characteristic that may exist to degrees varying from minimal competency to complete mastery of more than one language"
(1977:3).

It is evident, then, that in defining bilingualism the emphasis is laid on language function, language competence and the number of languages.

In comparison, monolingualism has always been regarded as distinct from bilin-

gualism and has also received far more attention. Monolingualism implies that the native/first language is acquired naturally and that the speaker has the most reliable intuitions about it. The situation in bilingualism is not exactly the same as that in monolingualism where first language studies and investigations have been superimposed on a unilingual orientation. In spite of intensive research on child language acquisition from a neurolinguistic perspective, the interest of scholars is entirely focused on first language as a single language with no varieties. In other words, a monolingual's repertoire is viewed as a single language without a neurolinguistic recognition of its variety/varieties. Should a language variety be conceived as neurolinguistically distinct from the language, or should we think of the two as unitary? In raising this question, we re-emphasize the importance given to language variety in interpreting the results from both neurolinguistic and linguistic viewpoints. The results of the present study clearly demonstrate that the dominant language variety in the monolinguals' linguistic repertoires is involved in the same way as the dominant language in the bilinguals' linguistic repertoires during foreign language learning. Therefore, it seems that there is no monolingualism from a neurolinguistic point of view. This is confirmed in our results where we presented the direction and aspects of language interference. It is possible, then, that the concept of bilingualism, as depicted neurolinguistically, could be used to redefine monolingualism. This claim may thus have interesting repercussions regarding some of the language learning hypotheses in question.

Such a claim prompts speculations about Albert & Obler's notion (1978) that people who become bilingual at an early stage will later have greater facility in picking up a third language. In exploring this area one may ask who is not bilingual from a neurolinguistic perspective at an early stage. In our view, the findings of the

present study suggest that every monolingual is bilingual from a neurolinguistic viewpoint. Accordingly, it would be easy for every one to pick up a foreign language. This view harmonizes with the 'Natural Order Hypothesis' which stresses the fact that foreign language learners follow the same developmental sequence in the learning process irrespective of their different linguistic repertoires. Of particular importance for the role of bilingualism in learning a foreign language, as depicted by Albert & Obler (1978), is Mägiste's (1986) view of the effect of bilingualism on foreign language learning. According to this point of view:

"passive bilingualism seems to facilitate learning a third language, while active bilingualism might delay it"
(Mägiste, 1986:116).

As we have seen above, the researcher of this study saw in the present results evidence that the theory of monolingualism is a 'myth' from a neurolinguistic perspective. Therefore, the recommendation that emerges is that it is possible to pursue the implication of Mägiste's notion (1986) in the alleged monolingual data, too.

What is interesting to us here is the distinction made by Mägiste (1986) between passive and active bilingualism with regard to learning a third language. This distinction, we presume, is attributable to differences in the degrees of language activation in the bilingual brain. If this is so, it would be necessary to find out whether the present populations (Group 1 and Group 2) are active or passive bilinguals. Through this research, we have drawn attention to the languages which are in the Monolingual 1 and Bilingual populations' linguistic repertoires (Group 1 and Group 2)—Modern Standard Arabic (MSA) and the regional variety in the

former and Armenian and Arabic in the latter. It is hardly imaginable that the languages in question of each group are not in contact; and so it is not surprising to find that the alternate use of these languages (MSA and the regional variety; Armenian and Arabic) in a single situation often arises. Besides, it is now generally agreed that alternate use of two or more languages is in fact an appropriate speech mode in some bilingual communities. From this observation, we draw the conclusion that both our groups are, neurolinguistically speaking, active bilinguals. Therefore, the distinction between active and passive bilingualism is not an important variable bearing on the issue of foreign language learning in the present study. This is supported by the fact that the interlanguage speech production of the Monolingual 1 population (Group 1) did not differ from that of the Bilingual population (Group 2) as a whole.

What is of great value in this study is (a) that it acknowledges the cruciality of interpreting language learning neurolinguistically, and (b) it gives language learning its special importance in the success of formulating assumptions about the teaching methods. Despite the fact that we do not wish to recommend certain pedagogical approaches, curricula, and teaching strategies to overcome language learners' difficulties, this study has led us to the following pedagogical conclusion. On the basis of our findings, we urge language practitioners not to design syllabi or adopt teaching methods specific to foreign language learners with different linguistic repertoires. Rather, we wish them to be aware of the notion of language dominance so that they can develop their own judgement accordingly.

In essence then, this study should not mean that we are eager to establish linguistics or neurolinguistics as disciplines in their own right. Instead, we wish to increase the awareness among practitioners of the promptings and needs of activi-

ties such as language pedagogy and language pathology. With this new perspective on language learning, it could well form the basis for making further empirical studies. However, in spite the fact that our study has confirmed us in our conviction that the profile procedures are vital for language assessment, mention should be made of the necessity of empirical tests to verify our findings. In this way, we can dispel misinformation, point to areas where knowledge is inadequate, and indicate the kinds of investigation that we need to fill these gaps. The demand for empirical testing implies that we want to avoid distorting the interpretation of our results by neglecting other equally important aspects of the total enterprise which also need to be studied. In principle, we believe that profiling and testing are the two sides of one coin, namely language assessment: the advantages of the one compensates for the disadvantages of the other. Therefore, we do not assume that there is a language research approach which has all the answers. Instead we believe that any improvement in language research is likely to come about through the cumulative effect of many painstaking studies.

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Appendix A

THE STUDENT QUESTIONNAIRE

Section I

1. Please answer the following questions:

a. Name/Initials:

b. Sex: Male: ☐

Female: ☐

c. Age

d. First Language:

e. Country of origin:

f. Have you ever lived in a country where English is spoken?

Yes ☐

No ☐

g. If "yes", where and how long did you live there?

.....

Section II

Please answer the questions applicable to your situation:

1. How old were you when you started to learn Arabic? ☐

2. How old were you when you started to learn Armenian? ☐

3. How old were you when you started to learn English? ☐

Section III

1. How IMPORTANT is it if you	Not Important	No Opinion	Important	Very Important
speak several foreign languages?				
speak very good English?				
study English to get a higher grade in your final exam?				
study English to get a better future job?				
study English to read newspapers and magazines in English?				
study English to enable you to read the resource books in the English language rather than in translation?				
study English to gain more respect from people?				
study English to become more knowledgeable?				
study English for your future career?				

2. Do you agree that	Agree	No Opinion	Disagree	Strongly Disagree
learning English is interesting?				
we should give up learning English when we leave school?				
learning English is time consuming?				
it is a good idea to learn foreign languages even if they are not required in schools?				
one should devote more time to learning English?				
learning English is great?				
studying a foreign language is an enjoyable and interesting experience?				
English is an important subject in the school programme?				
one should spend more time on other subjects rather than on English?				
you love English?				
speaking and listening to people who speak other languages is enjoyable?				
you hate English?				

Thank you very much for your co-operation.

Appendix B

Transcriptional Features

/ Tone-units are marked by slant lines;

(') Prominent syllables are indicated by a stress-mark;

(.) Brief pause length;

(-) Unit pause length (equivalent to a pulse of a speaker);

(- -) Double pause length;

(- - -) Treble or longer pause length;

( ) Uninterpretable speech (it may be phonetically transcribed, or its orthographic transcription indicates that the analyst is unsure of what is on the tape;

? Doubt about the transcriptional accuracy;

* Overlap in the speech; and

(( )) A brief or incomplete utterance which does not interrupt the speaker's flow.

Other features of the transcription are:

Nonlinguistic vocal information is written into the transcription at the appropriate point. Capital letters are not at the beginnings of sentences, but they are kept for ease of reading in the case of proper names, abbreviations, and the pronoun 'I'.

Appendix C

Name | Age | Sample date | Type

A	Unanalysed			Problematic		
	1 Unintelligible	2 Symbolic Noise	3 Deviant	1 Incomplete	2 Ambiguous	3 Stereotypes

B Responses

Stimulus Type	Totals	Repetitions	Normal Response: Major: Elliptical 1	Elliptical 2	Elliptical 3+	Reduced	Full	Minor	Abnormal: Structural	Ø	Problems
Questions											
Others											

C Spontaneous							

D Reactions		General	Structural	Ø	Other	Problems

Stage I (0;9–1;6)

Minor	*Responses*				*Vocatives*	*Other*	*Problems*
Major	*Comm.*	*Quest.*	*Statement*				
	'V'	'Q'	'V'	'N'		Other	Problems

Stage II (1;6–2;0)

Conn.	Clause				Phrase		Word
	V*X*	Q*X*	SV	A*X*	DN	VV	-ing
			SO	VO	Adj N	V part	pl
			SC	VC	NN	Int *X*	
			Neg *X*	Other	PrN	Other	-ed

Stage III (2;0–2;6)

	X + S:NP	*X* + V:VP	*X* + C:NP	*X* + O:NP	*X* + A:AP	
	V*XY*	Q*XY*	SVC	VCA	D Adj N	Cop
			SVO	VOA	Adj Adj N	Aux^M_O
	let XY	VS(*X*)	SVA	VO_dO_i	Pr DN	
	do XY		Neg *XY*	Other	$Pron^P_O$	Other

Stage IV (2;6–3;0)

	XY + S:NP	*XY* + V:VP	*XY* + C:NP	*XY* + O:NP	*XY* + A:AP	
	+ S	QVS	SVOA	AA*XY*	NP Pr NP	Neg V
		Q*XY* +	SVCA	Other	Pr D Adj N	Neg *X*
	V*XY* +	VS(*X*+)	SVO_dO_i		c*X*	2 Aux
		tag	SVOC		*X*c*X*	Other

Stage V (3;0–3;6)

and	Coord.	Coord.	Coord. 1 1 +		Postmod. clause 1 1 +	-est
c	Other	Other	Subord. A 1 1 +			-er
s			S C O		Postmod. phrase 1 +	-ly
Other			Comparative			

Stage VI (3;6–4;6)

(+)				(−)							
NP	VP	Clause	Conn.	Clause	Phrase					Word	
				Element	NP			VP		N	V
Initiator	Complex	Passive	*and*	Ø	D	Pr	$Pron^P$	Aux^M Aux^O	Cop	*irreg*	
Coord.		Complement.	c	⇄	D Ø	Pr Ø					
		how *what*	s	Concord	D ⇄	Pr ⇄		Ø		*reg*	
Other								Ambiguous			

Stage VII (4;6+)

Discourse		*Syntactic Comprehension*
A Connectivity	*it*	
Comment Clause	*there*	*Style*
Emphatic Order	Other	

Total No. Sentences	Mean No. Sentences Per Turn	Mean Sentence Length

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Appendix D

PRISM-L
Summary
Name Age Date of birth

Sample no.							
Date							
Duration							
Type							
Unanalysed							
Minor (p2) Types							
Tokens							
TTR							
Minor:major (Tokens)							
Major (pp4-5) Types							
Tokens							
TTR							
Fields used							
Sub-fields used							
Repetitions							

Comments

PRISM-L

Minor Lexemes (Summary)

					Totals
Unanalysed	Unintelligible	Ambiguous	Symbolic Noise	Other	
Social	Spontaneous		Response		
	Stereotype		Comment		
	Proper N		Other		
Relational	Pronominal 1 2 3		Dem Art Other		
	Prepositional Loc		Temp	Other Problems	
	Verbal *be* 1 2 3		Other	Neg	
	Interrogative		Tags		
	Connective				
	Empty		Other		
Avoidance					

Ty

To

Ty

To

PRISM-L
Major Lexemes (Summary)

Totals						
Ty						
To						

Page					
4	Man	Body	Health		
5	Clothing	Food			
6	Moving	Making/Doing	Happening	Living	
	Having	Thinking	Feeling		
7	Sound	Sight	Smell	Taste	Touch
	Language	Imagination			
8	Recreation	Occasions	Shows	Music	Art
9	Road	Rail	Air	Water	Fuel
10	Animals	Birds	Fish	Insects	
11	Flowers	Trees	Light		
	Colour	Fire	Water		
12	Building	Furniture	Tools	Containers	
13	Quantity	Measurement	Size	Shape	
	Time	Location	State		
14	Government	Law	Education	Religion	Business	Manufacture
15	Space	World	Minerals	Weapons	Money	
	Other					

PRISM–L

Lexeme Inventory (Major Items)

Man	Family		Type
	Jobs		General
	Group		Contacts
	Location		Other
	Character +	–	Neutral
Body	Main Parts		Limbs
	Face		Outside
	Health		Inside
	Character +	–	Neutral
	Other		
Health	Disease		Protection
	People		Implements
	Other		

PRISM-L

Clothing	General		Material	
	Outer		Footwear	
	Man	Woman	Neutral	Child
	Accessories		Parts	
	Caring		Other	
Food (Grown)	Fruit	Part	Location	
	Vegetables	Grain	Part	
	Character		Other	
(Processed)	Type	Dairy	Seafood	
	Drinks		Flavouring	
Food (Grown and processed)	Action		Location	
	Meals		Utensils	
	People		Other	

Moving	Come/Go	Static	
	Sleep	Animate	
	Things	Other	
Making/ Doing	General	Specific	
	Type		Other
Happening			Other
Living			Other
Having	Process +	Process −	
Thinking	Process	General	
	Type		Other
Feeling	+	−	
	Neutral	Other	

PRISM-L

Sound	General	Quality	
	Specific	Implements	Other
Sight	Act	Implements	Other
Smell	Act	Character	Other
Taste	Act	Character	Other
Touch	Act	Character	Other
Language	Speak/Listen	Read/Write	
	Act	Product	
	People	Character	
	Implements	Part	Other
Imagination	Type	People	Other

Recreation	Action	Location	
	Games	Sports	
	People	Equipment	
	Things	Other	
Occasions	General	Xmas	Other
Shows	Type	Location	
	Action	People	
	Implements	Other	
Music	Instruments	Type	
	Action	People	
	Parts	Other	
Art	Implements	Type	
	Quality	People	Other

Land (Road)	Vehicle	Parts
	Action	Location
	People	Other
(Rail)	Vehicle	Parts
	Action	Location
	People	Other
Air	Vehicle	Parts
	Action	Location
	People	Other
Water	Vehicle	Parts
	Action	Location
	People	Other
Fuel		Other

Animals	General	Pet	
	Farm	Wild(Small)	
	Water	Wild (Large)	
	Reptile	Extinct/Imaginary	
	Noise	Location	
	Action (Us → Them)	(Them → Us)	
	Type	Parts	Other
Birds	Type	Parts	
	Water	Farm	
	Action	Noise	Other
Fish	Type	Parts	
	Action	Control	Other
Insects	Type	Parts	
	Action	Location	Other

PRISM-L

Flowers (etc.)	Type	Parts	
	Action	Other	
Trees	Type	Parts	
	Action	Other	
Light	Type	Control	Other
Colour	Type	General	
	Action	Implement	Other
Fire	Type	Fuel	
	Control	Other	
Water	Type	Action	
	Control	Other	

PRISM-L

Building	Type	Parts
	Outside	Materials
	Action	People
	Rooms	Other
Furniture	General	Bathroom
	Bedroom	Living Room
	Kitchen/Dining	Other
Tools	General	Farm/Garden
	People	Other
Containers	Type	Parts
	Action	Other

Quantity	General	Specific	
	Act	Other	
Measurement	Distance	Weight	Volume
	Time	Heat	Other
Size	+	–	
Shape			
Time	Day	Period	
	Past	Present	Future
	Frequency	Other	
Location	General	Specific	
	Part	Other	
State	Quality	Intensity	
	Like +	Like –	
	Other		

Government	Type	People	Other
Law	Location	People	Other
Education	Type	Part	
	Action	People	
	Topic	Other	
Religion	Location	Implements	
	People	Other	
Business	Type	Implements	
	Action	People	
	Location	Parts	Other
Manufacturing	Location	Equipment	
	Action	People	Other

Space	Entities/Events	Exploration	Other
World	Land	Water	
	Surface	Depth	
	Location	Climate	Other
Minerals	Type	Act	Other
Weapons	Type	People	Other
Money	Units	Location	
	Action	Type	Other
Other			

PRISM–L

Further Analysis

Paradigmatic Relations	Synonymy	Error
	Opposition	
	Hyponymy	
	Incompatibility	
	Other	
Syntagmatic Relations		
Developmental Error	Overextension	
	Underextension	
	Mismatch	

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Appendix E

PRISM–G Name Age Sample Totals

Unanalysed

Unintelligible	Incomplete	Symbolic Noise	Ambiguous	Stereotypes	

I

Minor

Social	Proper Name	Other	+ Specifications	

C/E

Major

Elements	Activity		Entity		Deictic				Attr	Inter-rog	Other
	Dyn	Stat	Anim	Inanim	Anim	Inanim	Sco	Other			
		Cop									
+ Specification											
Scope											
Attribute											
Definiteness											
Possessive											
Quantity											
Other											

D

S

ii

C

Elements

Act + Dyn	Exp + Stat	Poss + Stat	+ Interrog

	Dyn	Stat	Goal	Temp	Loc	Other
Dyn						
Stat						

	Ent	Attr	Temp	Loc	Other
Ent					

E

Other + Other	

+ Specification	Dyn	Stat	Act	Exp	Goal	Temp	Loc	Ent	Poss	Attr	Other
Scope											
Attribute											
Definiteness											
Possessive											
Quantity											
Other											

S

D

Deictic									

III

Elements	+ Goal	+ Temp	+ Loc	+ Other
Act + Dyn				
Exp + Stat				
Poss + Stat				
Dyn + Goal				
Stat + Goal				
Other				

+ Interrog

C

E

+ *Specification*	Dyn	Stat	Act	Exp	Poss	Goal	Temp	Loc	Other
Scope									
Attribute									
Definiteness									
Possessive									
Quantity									
Other									

Deictic								

S

D

IV

Elements	+ Temp	+ Loc	+ Other
Act + Dyn + Goal			
Exp + Stat + Goal			
Poss + Stat + Goal			
Other			

+ Interrog

C

E

+ *Specification*	Dyn	Stat	Act	Exp	Poss	Goal	Temp	Loc	Other
Scope									
Attribute									
Definiteness									
Possessive									
Quantity									
Other									

Deictic								

S

D

5+ Elements	

Deictic		+ Specification

C	E

D	S

Totals

Major clauses (C) _____

Major elements (E) _____

Specifications (S) _____

Deictics (D) _____

Means

Elements per clause (E/C) _____

Specifications per element (S/E) _____

Deictics per element (D/E) _____

V

Unanalysed

Clause (A–B) Sequence

	Addition		Reform.		Contrast		Temporal		Cause		Location		Condition		Purpose		Other	
	Conn	ϕ	Conn	ϕ	Conn	ϕ	Conn	ϕ	Conn	ϕ	Conn	ϕ	Conn	ϕ	Conn	ϕ	Conn	ϕ
1 + 1 ✓																		
×																		
1 + 2 ✓																		
×																		
1 + 3[1] ✓																		
×																		
2 + 1 ✓																		
×																		
2 + 2 ✓																		
×																		
2 + 3[1] ✓																		
×																		
3 + 1 ✓																		
×																		
3 + 2 ✓																		
×																		
3 + 3[1] ✓																		
×																		
4[1] + 1 ✓																		
×																		
4[1] + 2 ✓																		
×																		
4[1] + 3[1] ✓																		
×																		

Order-of-mention

	$C_1 \rightarrow C_2$	$C_1 \rightarrow C_2 \rightarrow C_3$	Other →	$C_2 \leftarrow C_1$	Other ←
✓					
×					

Presupposed T elements

	1					2	3+	Clause
	Act/Exp	Dyn/Stat	Goal	Scope	Other			
✓								
×								

Idiomatic

Error

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Appendix F

Phonological Profile (PROPH)

Name _____ Duration _____

Age _____ Sample date _____ Type _____

Accent conventions _____

Gloss	Transcriptions	Gloss	Transcriptions

Gloss	Transcriptions	Gloss	Transcriptions	Gloss	Transcriptions
1		41		81	
2		42		82	
3		43		83	
4		44		84	
5		45		85	
6		46		86	
7		47		87	
8		48		88	
9		49		89	
10		50		90	
11		51		91	
12		52		92	
13		53		93	
14		54		94	
15		55		95	
16		56		96	
17		57		97	
18		58		98	
19		59		99	
20		60		100	
21		61			
22		62			
23		63			
24		64			
25		65			
26		66			
27		67			
28		68			
29		69			
30		70			
31		71			
32		72			
33		73			
34		74			
35		75			
36		76			
37		77			
38		78			
39		79			
40		80			

Problems	

Total word types _____ TTR _____

Total word tokens _____ Total problems _____

Repeated forms _____ Total unintelligible _____

Variant forms _____ Analysed:unanalysed _____

C –

p –	b –		
t –	d –		
k –	g –		
tʃ –	dʒ –		
f –	v –		
θ –	ð –		
s –	z –		
ʃ –			
h –			
	m –		
	n –		
w –	r –		
j –	l –		

V

ɪ	ʊ	
e	ʌ	
æ	ɒ	
ə		
iː	ɜː	
ɑː	uː	
	ɔː	
eɪ	ɔɪ	
aɪ	eɪə	
	ɔɪə	
	aɪə	
əʊ	ɑʊ	
əʊə	ʊə	
ɑʊə		
ɪə	ɛə	
ə	ɪ/iː	ʊ/uː	ɑː/ɑʊə	æ/ɜː
əʊ	eɪ	aɪ	ɪə	ɛə

CC –

p	l –	b	l –
	r –		r –
	j –		j –
t	r –	d	r –
	j –		j –
	w –		w –
k	l –	g	l –
	r –		r –
	j –		j –
	w –		w –
s	p –	s	l –
	t –		m –
	k –		n –

θ	r –	
	j –	
	w	
f	l –	
	r –	
	j –	
m	j –	
n		
l		
h		
v		
s	w –	
	j –	
ʃ	r –	

Stress

1	
2	
3 +	

CCC –

s p	l –	
	r –	
	j –	
s t	r –	
	j –	
s k	l –	
	r –	
	j –	
	w –	

– C

– p				– b			
– t				– d			
– k				– g			
– ʧ				– ʤ			
– f				– v			
– θ				– ð			
– s				– z			
– ʃ				– ʒ			
– m̩				– m			
– n̩				– n			
				– ŋ			
(– r)							
– l̩				– l			

– C –

p			
b			
t			
d			
k			
g			
ʧ			
ʤ			
f			
v			
θ			
ð			
s			
z			
ʃ			
ʒ			
h			
m			
n			
ŋ			
l			
r			
w			
j			

– CC(C) –

p +			
b +			
t +			
d +			
k +			
g +			
ʧ +			
ʤ +			
f +			
v +			
θ +			
ð +			
s +			
z +			
ʃ +			
ʒ +			
m +			
n +			
ŋ +			
l +			
r +			

– CC

– p	t			– f	t			– m	p			– l	p		
	θ				θ				d				t		
	s				s				f				k		
– t	θ			– θ	t				θ				ʧ		
	s				s				z				b		
– k	t			– ʧ	t			n	t				d		
	s			– ʃ					d				ʤ		
– d	z			– b	d				ʧ				m		
– ʤ	d				z				ʤ				n		
– z				– g	d				θ				f		
– ʒ					z				s				v		
– s	p			– v	d				z				θ		
	t				z			ŋ	k				s		
	k			– ð	d				d				z		
					z				z						

– CCC(C)

Conn

Inventory of Phones Consonants

Place

	Bil	L-d	Den	Alv	P-al	Ret	Pal-a	Pal	Vel	Uvu	Pha	Glo	Oth
C													
CC													
CC													
Tot													

Manner

	Plo	Aff	Fric	Nas	App	Other Pul	Other Non-pul
C							
CC							
CC							
Tot							

Total C –	
Total –C –	
Total –C	
Total C	
Total V	
C:V	

Target Analysis (Phones)

Place

		T	C–	–C–	–C	
Bilabial	+					
	–					–Bil
	ø					
(Labio-) Dental	+					
	–					–Den
	ø					
Alveolar	+					
	–					–Alv
	ø					
Palato-alveolar	+					
	–					–P-a
	ø					
Velar	+					
	–					–Vel
	ø					
Glottal	+					
	–					–Glo
	ø					
Total	+					
	–					–Tot
	ø					

Error Analysis Realizations

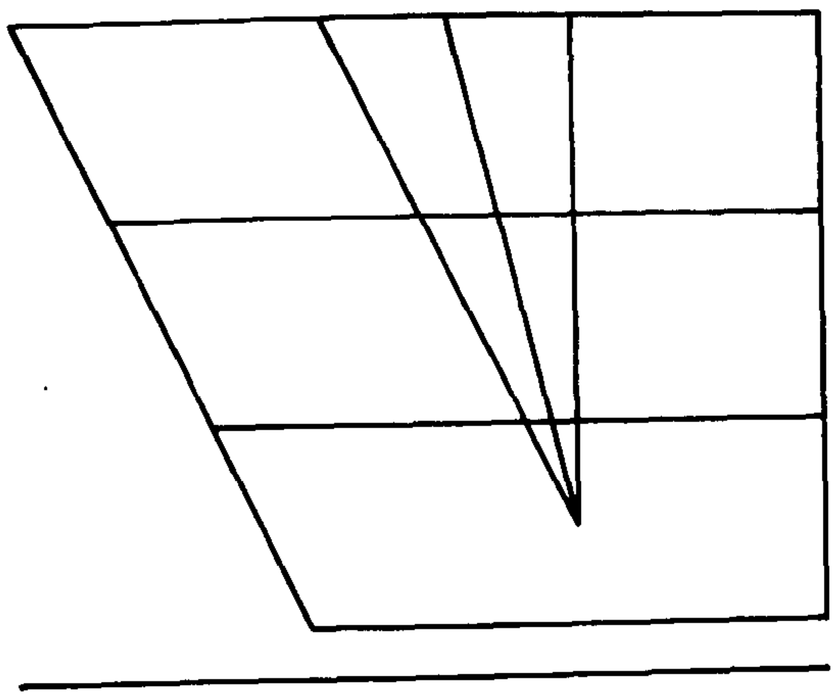
Bilabial	Dental	Alveolar	Palato-Alveolar	Velar	Glottal	Other
C– –C– –C	C– –C– –C	C– –C– –C	C– –C– –C	C– –C– –C	C– –C– –C	C– –C– –C

Manner

		T	C–	–C–	–C	
Plosive	+					
	–					–Plo
	ø					
Affricate	+					
	–					–Aff
	ø					
Fricative	+					
	–					–Fric
	ø					
Nasal	+					
	–					–Nas
	ø					
Approximant	+					
	–					–App
	ø					
Total	+					
	–					–Tot
	ø					

Plosive	Affricate	Fricative	Nasal	Approx-imant	Other
C– –C– –C	C– –C– –C	C– –C– –C	C– –C– –C	C– –C– –C	C– –C– –C

Vowels



Error Analysis Realizations

		Cl	Mid	Op	?	Oth
Cl	+					
	−					
Mid	+					
	−					
Op	+					
	−					
Tot	+					
	−					

		Fr	Cen	Ba	?	Oth
Fr	+					
	−					
Cen	+					
	−					
Ba	+					
	−					
Tot	+					
	−					

	V	VV(V)	Other
V			
VV(V)			

	Oral	Nasal	?
Oral			

	V́	V̌	?
V́			
V̌			

	Roun	Unr	?
Roun			
Unr			

	V	V:	?
V			
V:			

Inventory of Clusters

	I	M	F
CC			
CCC(C)			

Place	Bil	Den	Alv	Pal-a	Vel	Oth	Tot
Bilabial							
Dental							
Alveolar							
Pal-alv							
Velar							
Other							
Total							

Manner	Plo	Aff	Fric	Nas	App	Oth	Tot
Plosive							
Affricate							
Fricative							
Nasal							
Approx							
Other							
Total							

Target Analysis (Clusters)

	I	M	F
CC(CC)			
C > CC			
CC > +V			
$C_1C_2 > C_1$			
$C_1C_2 > C_2$			
$C_1C_2 > C_3$			

Place	Bil		Den		Alv		Pal-a		Vel		Oth	Total	
	+	−	+	−	+	−	+	−	+	−		+	−
Bilabial													
Dental													
Alveolar													
Pal-alv													
Velar													
Glottal													
Total													

Manner	Plo		Aff		Fric		Nas		App		Oth	Total	
	+	−	+	−	+	−	+	−	+	−	−	+	−
Plosive													
Affricate													
Fricative													
Nasal													
Approx													
Total													

Feature Analysis (Phones)

Voicing

Place	Maintained				Lost			Maintained				Lost			Maintained				Lost		
	C–	–C–	–C	ʔ	C–	–C–	–C	C–	–C–	–C		C–	–C–	–C	C–	–C–	–C		C–	–C–	–C
Bilabial																					
Dental																					
Alveolar																					
Pal-alv																					
Velar																					
Glottal																					
Total																					

Manner

Plosive																					
Affricate																					
Fricative																					
Nasal																					
Approximant																					
Total																					

Feature Analysis (Clusters)

Voicing

	Maintained	Lost	Other
CC –			
–CC –			
–CC			
Total			

Process Analysis

Syllable Structure

S Deletion _____

S Addition _____

C Deletion _____

C Addition _____

Other _____

Assimilations

C Harmony _____

V Harmony _____

Other _____

Substitutions

_____

?

_____

Functional load _____

Variants _____

Contrasts

100% + _____

100% – _____

Indeterminacy

C _____

V _____

Syll _____

Unanalysed _____

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