Comprehension and performance in second language acquisition : a study of second language learners' production of modified comprehensible output.

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Comprehension and Performance in Second Language Acquisition: A Study of Second Language Learners' Production of Modified Comprehensible Output

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بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ

وَمَا أُوتِيتُم مِّنَ الْعِلْمِ إِلَّا قَلِيلًا

In the name of Allah, the Most Gracious, the Most Merciful:

"Of knowledge it is only
a little that was communicated
to you (Mankind)."

Verily, Almighty Allah has said the truth.
(The Holy Qur'an, 17: 85)

To my loving Country

and my caring Family,

with love

I hereby confirm that no part of this Thesis has previously been submitted by me for any degree in this or any other University.

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Abstract

This study investigates non-native speakers' (NNSs) production of modified comprehensible output. More specifically, the study investigates NNSs' ability to modify their interlanguage (IL) utterances (phonology, morphosyntax and lexical choice) to make them more comprehensible. These modifications may be other-initiated, i.e., they may occur when the NNS is asked by a speech partner to clarify an utterance, or they may be self-initiated, i.e., they may occur when a NNS realizes that a current or previous utterance (or part of it) is/was not completely comprehensible to a speech partner.

One aim of the study is to validate theoretical arguments by Swain (1985), Brock, Crookes, Day and Long (1986), Hatch, Flashner and Hunt (1986) and Sato (1986) which claim that when NNSs are asked by native speakers (NSs) to clarify their output, they will do so by modifying their IL utterances thereby producing comprehensible output. A second aim of the study is to validate Varonis and Gass's (1985b) arguments which show that NNS/NNS interactions provide better contexts for the negotiation of meaning than NS/NNS interactions. A third aim of the study is to validate close observations by Schegloff, Jefferson and Sacks (1977) and Kasper (1985) which demonstrate that the organization of conversations favours self-initiated self-completed repair over other-initiated other-completed repair. And a fourth aim of the study is to extend the range of the limited number of existing empirical studies which have examined NNSs' production of modified comprehensible output (Pica 1988 and Pica, Holliday, Lewis and Morgenthaler 1989).

With these aims in mind, this study examines NNSs' production of modified comprehensible output in NS/NNS, NNS/NNS dyadic and group interactions. Specifically, it examines (i) the role of other-initiated clarification requests, (ii) the role of self-initiated clarification attempts, (iii) the role of the speech partner (NS vs NNS), (iv) the role of task-type (picture-dictation vs opinion-exchange) and (v) the role of the type of interaction (dyadic vs group) in affecting NNSs' production of modified comprehensible output.

The population of the study consisted of 35 (16 male, 19 female) adult subjects: 8 NSs and 27 NNS informants of intermediate/higher -intermediate proficiency levels. The NNSs represented 13 different first language (L1) backgrounds. Three communication tasks were used to collect data: a picture-dictation task, an opinion-exchange task and a decision-making task. The first two tasks were performed in pairs (NS/NNS and NNS/NNS) and the third in groups of NNSs. Dyadic interactions were audio-taped and group interactions were both audio- and video-taped. Systematic selection of 5 minute samples from each audio-taped activity were later transcribed for analysis. 15-minute samples from each video-tape were selected for transcription and analysis.

The findings of the study show that NNSs do modify their IL utterances in the direction of comprehensible output when they are asked by their speech partners to make themselves understood with regard to an utterance or part of it or when they realize that their current or previous utterance is/was not completely comprehensible to their speech partners. They do so in NS/NNS and NNS/NNS dyadic encounters and in group interactions.

However, the findings also reveal that although both self-initiated clarification attempts and other-initiated clarification requests provided NNSs with opportunities to modify their production in the direction of MCO, the former resulted in a significantly higher proportion

of MCO than other-initiated clarification requests. It was further found that there are significant differences in some aspects of NS/NNS and NNS/NNS encounters with regard to the negotiation of meaning. NNS/NNS encounters provided NNSs with significantly greater proportions of extended negotiation of meaning routines than NS/NNS encounters.

Significant differences were also found between the number of opportunities the type of task offered for the production of MCO. The picture-dictation task offered significantly greater opportunities for the production of MCO than the opinion-exchange task. Furthermore, the results reveal that there are some differences between dyadic encounters and group interaction. Group interaction provides a slightly higher rate of conversion between initiation and MCO and a significantly higher frequency of extended negotiation of meaning than dyadic encounters.

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May I ask Allah to enable me to serve my home country to the best of my ability.

Ali Shehadeh

Contents

Abbreviations used in the Text:

ANOVA:	Analysis of Variance
CA:	Contrastive analysis
CALP:	Cognitive academic language proficiency
CC:	Comprehension checks
CLL:	Community language learning
CLT:	Communicative language teaching
CPH:	The Critical period hypothesis
df:	Degree of freedom
DM:	Decision-making
EAP:	English for academic purposes
EFL:	English as a foreign language
EPTB:	English Proficiency Test Battery
ESL:	English as a second language
FD:	Field dependence
FI:	Field independence
FL:	First language (= mother tongue, language one, or native language)
FLA:	First language acquisition
FT:	Foreigner talk
HIG:	High input generators
I:	Initiation
IL:	Interlanguage
IRF:	Initiates, responds, feedback
IT:	Interlanguage talk
L1:	Language one (= mother tongue, first language, or native language)
L2:	Language two (= target language)
L3:	Language three (any language other than the TL or the MT)
LAD:	Language acquisition device
LCP:	Language contact profile
LEP:	Limited in English proficiency
LIG:	Low input generators
MCO:	Modified comprehensible output
MLU:	Mean length of utterance
MT:	Mother tongue (= first language, language one, or native language)
NL:	Native language (= mother tongue, first language, or language one)
NNSs:	Nonnative speakers
NOH:	The Natural order hypothesis
ns:	Not significant
NSs:	Native speakers
O:	The outcome
OE:	Opinion-exchange
OI:	Other-initiation
OICRs:	Other-initiated clarification requests
OIMCO:	Other-initiated modified comprehensible output
OSV:	Object-subject-verb
p:	Probability
PD:	Picture-dictation
RO:	Reaction to the outcome

SI:	Self-initiation
SICAs:	Self-initiated clarification attempts
SIMCO:	Self-initiated modified comprehensible output
SL:	Second language
SLA:	Second language acquisition
SLOPE:	Second language oral proficiency test
SVO:	Subject-verb-object
TEFL:	Teaching of English as a foreign language
TESL:	Teaching English as a second language
TESOL:	Teachers of English to speakers of other languages
TL:	Target language (= language two)
TS:	Trouble-source
TT:	Teacher talk
UG:	Universal Grammar
UH:	The Universal Hypothesis
VSO:	Verb-subject-object

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Chapter One
Introduction

This study investigates non-native speakers' (NNSs) production of modified comprehensible output (MCO). More precisely, the study looks at the opportunities which NNSs have to adjust their interlanguage (IL) utterances (phonology, morphosyntax and lexis) to make them more comprehensible both when they are asked by their speech partners to make themselves understood with regard to an utterance or part of an utterance and when they realize that their current or previous utterance or part of it is/was not completely comprehensible to their speech partners.

This introductory Chapter introduces the main themes of the study. It is divided into four sections. The first section deals with the motivation underlying the present study. The second section deals with the objectives and significance of the study. The third section deals with the scope of the investigation and section four provides a brief summary of subsequent Chapters.

1.1 Motivations for the Study

There is a considerable literature that describes input and interaction and attempts to investigate their role in second language acquisition (SLA) (e.g., Seliger 1983, Hatch 1978b, 1983b, Oller 1980, Snow and Hoefnagel-Hohle 1982, Ellis 1985a,b, Long 1980, 1981, 1983a,b,c,d, Krashen 1981a,b, 1982a, 1985, Krashen and Terrell 1983, Wong-Fillmore 1985, Day 1985, Pica and Doughty 1985, Hirvonen 1985, Hawkins 1985, Long and Porter 1985, Doughty and Pica 1986, Young 1989, Saleemi 1989). These researchers, amongst others, have investigated the role of input in SLA whether in a naturalistic setting or in a classroom setting. The most recurring, but not unchallenged

(see, e.g., Day 1985, Pica and Doughty 1985) finding is that input and interaction facilitate both the route (e.g., Krashen 1981a, 1982a, 1985, Long 1983c, Hatch 1983b) and the rate/success (e.g., Snow and Hoefnagel-Hohle 1982, Bialystok 1978, Seliger 1977) of SLA. These findings have primarily been taken to support the thesis that SLA is promoted by providing **comprehensible input.**

There are researchers who have gone so far as to claim that comprehensible input is not only necessary for SLA, but that it is the only "causative variable" for it (Krashen 1981c: 57). These researchers claim that NNS production is primarily a trigger for the native speaker (NS) to initiate a move towards modifying the input and the management of interaction so as to ensure the provision of comprehensible input, thus achieving mutual comprehension with the NNS (see in particular Long 1980, 1983a, Pica, Doughty and Young 1986, Pica, Young and Doughty 1987).

There are also a limited number of studies which have addressed the issue of using second language (L2) learned knowledge in actual communicative situations, claiming that this facilitates SLA (Seliger 1977, Monshi-Tousi, Hosseine-Fatemi and Oller 1980, Snow and Hoefnagel-Hohle 1982, Gaies 1983, Gass and Varonis 1982, 1984, Krashen 1982a, 1985). (See Chaudron 1988, Chapters 4 & 5 for a review of further similar studies). These researchers argue that using learned knowledge of the target language (TL) provides opportunities for generating more comprehensible input. In other words, using L2 is not seen as demonstrating proficiency but rather as creating opportunities for more comprehensible input. Therefore, such studies have usually viewed the role of output as that of a secondary and relatively unimportant source of comprehensible input.

In short, the previous theoretical models of SLA which have investigated L2 learners' comprehension and production have looked at learning and communication strategies, exchange of information strategies, interaction, input, simplified input, output and feedback as requirements which may promote SLA by providing comprehensible input.

Some SLA researchers have pointed out that most of these studies and theoretical positions - and in particular those conducted in classroom situations - have not determined precisely what conditions or factors aid comprehension (Chaudron 1985a,b). Nor do these studies show how comprehension of L2 utterances leads to second language development. Chaudron recommends:

> "...much more observational, and especially experimental, classroom research is necessary in order to determine what aids L2 learners' comprehension, and how that comprehension and subsequent practice leads to greater target language competence" (Chaudron 1985a: 231).

Similarly, most these empirical studies and theoretical models have concentrated typically on (a) NS/NNS interaction and (b) the role of (modified) input and interaction in providing comprehensible input. With regard to the NS/NNS interactions, it has been argued that NNS/NNS (as compared to NS/NNS) interactions are better contexts in which negotiated interactions may be provided because "this negotiation serves the function of providing the participants with a greater amount of comprehensible input" (Varonis and Gass 1985b: 84). (See also Gass and Varonis 1985a,b, 1986, Varonis and Gass 1985a.) Varonis and Gass therefore suggest that the discourse which results from NNS/NNS interactions serves as an important function for NNSs:

> "First, it allows them a non-threatening forum within which to practise developing skills. Second, it provides them with an opportunity to receive input which they have made comprehensible through negotiation. In fact, we propose that this type of interaction facilitates the second language acquisition process" (Varonis and Gass 1985b: 87).

More importantly, however, it has recently been pointed out with regard to the role of modified input and interaction in providing comprehensible input that input and interaction studies, although providing empirical and theoretical claims about the important role played by comprehensible input in the process of SLA,

> "have, in effect, diverted attention away from studying interlanguage (IL) modifications produced by language learners as they make their output comprehensible input to the NS" (Pica 1988: 48).

Similarly, Pica, Holliday, Lewis and Morgenthaler (1989) have pointed out:

> "Although...research has focused mainly on the ways in which negotiated interaction with an interlocutor helps the learner to *understand* unfamiliar L2 input, we believe that it is also through negotiation that learners gain opportunities to attempt *production* of new L2 words and grammatical structures as well" (1989: 65).

In fact, attention has been drawn to the value of NNSs' production in the SLA process by several L2 researchers (e.g., Swain 1985, McLaughlin 1987, Pica 1987). It was Swain (1985) who first strongly argued that comprehensible input is not sufficient for successful SLA, but that opportunities for NNSs to produce **comprehensible output** are also necessary. Swain argues that the role of learner production of comprehensible output is independent in many ways of the role of comprehensible input (p. 252). She proposed a hypothesis relating to L2 learner's production comparable to that relating to comprehensible input. This she termed the "comprehensible output hypothesis" for SLA (1985: 249). Swain hypothesizes that comprehensible output plays a significant role in the SLA process:

> "Its role is, at minimum, to provide opportunities for contextualized, meaningful use, to test out hypotheses about the target language, and to move the learner from a purely semantic analysis of the language to a syntactic analysis of it" (Swain 1985: 252).

Swain, among others (e.g., Hatch 1978b, 1983b, Hatch, Flashner and Hunt 1986, Schachter 1983, 1984, 1986, Sato 1986, and Brock, Crookes, Day and Long 1986), drew attention to the need to put more emphasis on production, particularly the modifications NNSs make to their IL when NSs signal difficulty in understanding. These theoretical positions amount to the claim that when NNSs are asked by NSs to clarify their output, they will produce comprehensible output which provides comprehensible input to NSs. They will do this by modifying their IL utterances in the direction of native-like production. Put differently, when NSs indicate difficulty in understanding NNSs, the latter respond by modifying their IL morphosyntax, phonology and lexis, and, in doing so employ a more native-like use of the TL (Pica 1988: 46).

Empirical research has been comparatively rare (but see Pica 1988 and Pica et al. 1989) and it is, therefore, very difficult to come to any conclusion on the basis of the limited research that has been conducted to date into NNSs' production of modified comprehensible output. Further, the findings of the studies lend only partial support to the theoretical positions which initially prompted the investigation into the value of comprehensible output in SLA (see Ch 4). The findings of the existing empirical studies are not entirely consistent with each other, partly because of differences in the scope of the investigations, data collection methods and set up and design generally. So, for example, previous studies have collected data only from NS/NNS dyadic interactions and only in cases of other-initiated clarification requests. These studies said nothing about the role of NNS/NNS interaction, the role of group interaction and, most importantly, the role of self-initiated clarification attempts in providing opportunities for the production of modified comprehensible output. Existing findings are, therefore, neither conclusive nor comprehensive and the area under investigation is in need of further close scrutiny by more empirically valid means.

1.2 Objectives and Significance of the Study

This study was designed, amongst other things, to confirm the findings of the limited previous studies which have looked at L2 learners' production of MCO in NS/NNS contexts. However, the present study, unlike previous studies, will also look at NNSs' production of MCO in NNS/NNS interactions. This was motivated by studies by Gass and Varonis (1985a,b and 1986) and Varonis and Gass (1985a,b) which lend support to the hypothesis that NNS/NNS interactions provide better contexts for the negotiation of meaning and the provision of comprehensible input than NS/NNS interactions. This study investigates the extent to which such negotiation of meaning affects the comprehensibility of NNS output in NS/NNS as well as NNS/NNS contexts.

Also new in this study is the NNS group interaction activity. Although there are SLA researchers (e.g., Long 1975, Long and Porter 1985, Pica and Doughty 1985, Doughty

and Pica 1986) who have looked at interlanguage talk (IT) in dyadic and small group interaction, they have only considered its importance in the light of its provision of comprehensible input. No previous study has looked at the role of small group interaction in producing comprehensible output.

This study will, therefore, examine NNSs' production of modified comprehensible output not only in NS/NNS dyadic encounters, but also in NNS/NNS encounters, both dyadic and group. So, for instance, it is important to know whether NNSs make modifications to their IL phonology, morphosyntax and lexical choice when interacting with other NNSs in the same way as they have been claimed to when interacting with NSs, or whether they make such modifications in a systematic but less comprehensible way, for example. The study may reveal whether NNS/NNS interaction is more or less advantageous than NS/NNS talk for the production of MCO. Further, it is important to investigate whether group and dyadic interactions have different effects on the comprehensibility of the output.

Moreover, there are occasions when NNSs modify their IL phonology, morphosyntax and lexis to make them more comprehensible when they realize that their current or previous utterance is insufficient as a means for communicating the intended message. These are normally referred to in the literature as self-initiated self-completed repairs (Kasper 1985), and termed here **self-initiated modified comprehensible output.** Ethnomethodological researchers such as Schegloff, Jefferson and Sacks (1977) and Kasper (1985) have drawn attention to the importance of production and self-repair. Specifically, Schegloff et al. argued that in conversations, self-repairs are more effective than and are highly privileged over other-repairs. In conversations among NSs and NNSs, other-repairs are rare, probably because others give speakers the opportunity to repair for themselves.

Previous empirical studies which have investigated NNSs' production of MCO have only looked at the opportunities which requests for clarification (i.e., other-initiated clarification requests) give NNSs to modify their production in the direction of

comprehensible output. Unlike those studies, this study will also consider the opportunities which self-initiated clarification attempts give NNSs to produce modified comprehensible output. No empirical study investigating L2 learners' production has taken such learning strategies for providing modified comprehensible output into consideration. It will be of particular importance for this study to see the extent to which self-initiated clarifications differ from other-initiated clarifications in providing NNSs with opportunities for the production of modified comprehensible output. And therefore the study will compare the findings of the two suggested mechanisms (other-initiated modified comprehensible output vs self-initiated modified comprehensible output) in terms of the opportunities they provide for the production of MCO.

Another objective of the study is to test the effect of task-type on the frequency of repair initiations and NNSs' production of modified comprehensible output. Pica et al. (1989), for instance, found that although a picture-dictation task provided a significantly greater percentage of NS signals of requests for clarification and confirmation than jigsaw and discussion tasks, it did not provide NNSs with greater opportunities for the production of modified comprehensible output than the other two tasks (1989: 77-78). This study will examine the effect of task-type on the occurrence of other-initiated clarification requests, self-initiated clarification attempts and NNSs' opportunities for the production of modified comprehensible output.

The main implications of the study will be discussed in Ch 8. Ch 8 will also briefly discuss some pedagogical implications. For example, one pedagogical implication is that since most foreign/second language teaching normally takes place far away from the TL community, it is particularly important to examine the role NNS dyadic and group interactions play in providing suitable contexts for the production of MCO.

1.3 Scope of Investigation and Limitations

Modified comprehensible output could be investigated from various perspectives: its **actual production**, its **aspects and features** (nativelikeness, systematicity and variability), the **strategies** which NNSs follow in the process of its achievement (e.g., restructuring, paraphrasing, new starts, etc.) and its precise **role** in SLA. It is beyond the limit of this study to look at the aspects of modified comprehensible output, the strategies followed in its achievement or its precise role in SLA. The present study is only designed to look at the opportunities for NNSs' production of modified comprehensible output and the contexts which might encourage its production. It will do so in relation to (i) other-initiated clarification requests, (ii) self-initiated clarification attempts, (iii) NS/NNS interaction, (iv) NNS/NNS interaction, (v) task-type and (vi) group interaction.

This study will investigate NNSs' production of MCO (elicitation and analysis) at a controlled proficiency level (mid-intermediate to high-intermediate) and compare the opportunities for its production in terms of (i) type of initiation (self vs other), (ii) trigger of modified comprehensible output (self-initiated vs other-initiated), (iii) type of encounters (NS/NNS vs NNS/NNS), (iv) type of interaction (dyadic vs group), (v) type of task (picture-dictation vs opinion-exchange) and (vi) number of cycles involved in its production (one-signal vs extended negotiations).

It will be particularly interesting to investigate, in future research, if there are any differences between the strategies which NNSs follow to make themselves understood in response to other-initiated clarification requests and those which they follow in response to self-initiated clarification attempts. It will also be interesting to examine if there are any differences in the aspects and features of modified comprehensible output which result from other-initiations and those which result from self-initiations. So, for instance, it is interesting to investigate at which precise level or point the clarification occurs and whether adjustments are made to the segmental or suprasegmental aspects of the language. More importantly, if the findings of this study confirm the underlying

assumption that NNSs are able to modify their IL utterances in the direction of MCO, we look forward to future longitudinal research which examines the importance of NNSs' production of MCO in the SLA processes and development. Such research might also help to show the importance of MCO in SLA research and understanding.

Similarly, it is important to note that the study of input, interaction, intake, output and SLA may also include the study of the factors which affect SLA. It has generally been assumed, therefore, that in the field of second/foreign language teaching and learning there are various factors, external and internal, which affect second language acquisition. This effect may be positive (when SLA is promoted) or negative (when SLA is hindered). These factors include, amongst others, the role of the first language, setting differences (including the role of instruction), age differences, individual learner differences, gender differences and ethnic/cultural differences. The importance of examining these factors is that they might enable us, for instance, to specify the nature of the input that best suits L2 learners' comprehension and the nature of the output which they produce at a particular stage of their SLA. For example, Larsen-Freeman (1985a: 434) writes:

> "In input studies, the more we know about the learner - not only his or her L1, but also his or her age, socioeconomic status, target language proficiency, sex, opportunities for interaction with target language speakers, conditions under which the learning took place, etc. - the more we will know about the nature of the input the learner is likely to receive. Thus input studies provide a natural synthesis of foci on the learner and learning."

Knowing the extent to which these factors affect SLA in general and second/foreign language learning and teaching in particular may provide, pedagogically speaking, insights which help second and foreign language teachers make language learning more effective. However, as can be seen from Larsen-Freeman's (1985a: 434) remark above, in most cases the significance of these factors has been seen in relation to the role(s) they play in promoting SLA by assisting L2 learners' comprehension of TL utterances. (For other studies and explanations, see, for example, Krashen 1982b, 1985, Krashen

and Terrell 1983, Tarone 1983, Ellis 1985a.) There has been very little consideration of whether these factors promote or hinder SLA by giving opportunities to attempt production or not. These factors - or some of them - may prove to be important for the process of SLA not only by affecting the comprehension of input data but also by affecting the production of output data too.

It is beyond the scope of the present study to investigate the effect of these factors on NNSs' production of MCO. A study specifically designed to examine the role of these factors individually or collectively is well-motivated. Such research might investigate the extent to which the first language, setting differences, age differences, individual learner differences, gender differences and ethnic/cultural differences determine NNSs' performance ability including the opportunities for the production of MCO.

It must be borne in mind that the categories, aspects, features, strategies and other variables judged as not relevant and therefore excluded from investigation and analysis in this study may be more important than the production of modified comprehensible output for other areas of SLA research and understanding, and certainly merit study in their own right.

1.4 Summary of Chapters

Chapter 2 reviews the literature on input and interaction in both first language acquisition (FLA) and SLA contexts. In particular, the Chapter reviews the various existing theoretical positions and research findings with regard to the nature of input and interaction in SLA contexts and their effect on NNSs' comprehension ability and L2 development.

Chapter 3 reviews studies and theoretical positions which relate to the relationship between the input data which NNSs receive and the output data which they produce, and the repair mechanisms and the various communication strategies which NNSs

follow when they communicate in the second language and when there is a communication breakdown.

Chapter 4 reviews the theoretical positions and the empirical studies which have examined (a) NNS/NNS interactions in relation to NS/NNS interactions and (b) NNSs' production ability, focusing in particular on their production of comprehensible output.

Chapter 5 describes in detail the methodology employed for data collection, including choice of informants, choice of communication tasks, data collection procedures and criteria for data transcription.

Chapter 6 presents the proposed model of clarification and modification routines within the framework of which the data are to be coded and analyzed. It provides a comprehensive account of the model, including its main categories and sub-categories, together with descriptions and examples of each. For ease of exposition, a chart will be attached to the end of the Chapter showing how the main categories and sub-categories relate to each other and to the model as a whole.

Chapter 7 contains detailed data analysis and the results of hypothesis testing. It describes and justifies the ways in which the findings are derived from the data. The results of hypothesis testing and the findings of the study are presented, interpreted and discussed comprehensively. The Chapter also summarizes the conclusions of hypothesis testing and presents the overall findings of the present study.

Chapter 8 will round off this study by discussing its findings in relation to those of other studies and the various theoretical positions that have been adopted. It will also discuss what implications the study has for SLA research and second/foreign language teaching. Recommendations for further research conclude the Chapter and the Thesis as a whole.

1.5 Conclusion

This introductory Chapter has detailed the motivations underlying the present study, its objectives, and the scope and limits of the investigation, and has concluded with a brief summary of the Chapters that follow. As mentioned above, the following Chapter will review those studies and theoretical positions which have addressed the issues of input and interaction and their role in SLA.

Chapter Two

Input and interaction in Second Language Acquisition

It is well-established in the literature that studying L2 learners' comprehension ability and performance ability is important for SLA research and second/foreign language learning and teaching. The rationale for studying these is that they may shed light on how people comprehend, process and perform in a second language, which may ultimately show exactly how SLA takes place and thereby enable us to provide the input which best suits L2 learners' comprehension ability (Krashen and Terrell 1983, Larsen-Freeman 1985a, McLaughlin 1987). SLA researchers typically investigate comprehension and performance by studying the nature and the role of input, interaction and output. Hence, the relevant areas for investigation include such concepts as input (and its nature), interaction, negotiation of meaning, intake (comprehensible input), and output; and notions such as foreigner talk, teacher talk, and interlanguage talk.

The main purpose of studying these concepts is to answer questions such as whether (simplified) input and (simplified) interaction promote SLA, what aspects of input and interaction most affect or best facilitate the route and/or the rate/success of SLA, whether interlanguage talk is helpful or harmful, whether performance ability is an impoverished version of the learner's comprehension ability, what communication strategies NNSs use when they interact in the TL, how they repair communication breakdowns, and to what extent learner internal mechanisms determine comprehension and production. Pedagogically speaking, knowledge of the relationship between the process of SLA and second language teaching practice could enlighten researchers and applied linguists, and steer second language classroom teachers and second/foreign language teaching practice towards a better understanding of, approaches to, and theories for language teaching. The present Chapter reviews the literature which relates to input and interaction in SLA and the following Chapter reviews the literature which

relates to the relationship between input data and output data, repair mechanisms and second language communication strategies.

As just mentioned, the present Chapter focuses on input and interaction in SLA. The Chapter is divided into three main sections. Section one deals with input, interaction and output in first language acquisition (FLA). The section briefly reviews the relevant theoretical positions and views as a background for the input and output studies in SLA. Section two deals in detail with input and interaction studies in SLA. The section consists of two main parts. The first part concentrates on the nature of input which NNSs receive, the way they interact with other speakers (natives or non-natives) in the TL, and when and how input qualifies as intake. The second part deals with the different explanations and theories which have attempted to account for the roles of input and interaction in affecting SLA. Section three presents a summary for the conclusions derived from the preceding two sections.

2.1 Input and Output in First Language Acquisition (FLA)

According to many SLA researchers (e.g., Long 1980, Krashen 1985), findings on related issues in the context of FLA provide both theoretical and pedagogical insights for 'pure' SLA research and second language teaching and learning. It is generally assumed, therefore, that studies on comprehension and performance in FLA are relevant to SLA, in that they aid understanding of how we acquire or learn a second language. This assumption seems to rest in part on the observed similarities between the nature and the characteristics of input and interaction which both child first language and second language learners are posited to receive from their interlocutors (e.g., Clark and Clark 1977, Newport, Glickman and Glickman 1977, Krashen 1985, Krashen and Terrell 1983) and in part on the "natural order" of acquisition of language which has been observed both in first language (Brown 1973, de Villiers and de Villiers 1978) and in second language (Krashen 1978, 1985, Krashen and Terrell 1983) contexts. Further, it has also been observed that input and interaction are similar in the role they play in

promoting or affecting language acquisition, whether first (e.g., Snow 1979, Heath 1983, Moerk 1980) or second (e.g., Corder 1967, 1978, Long 1980, Krashen 1981a, 1985, Krashen and Terrell 1983). For these reasons, I have decided to look at relevant research findings in the context of FLA before I proceed to consider research findings on input and output in the context of SLA.

In this section, I will first review the findings of various studies on first language acquisition and then conclude with some possible generalizations and implications for SLA and second/foreign language teaching and learning.

2.1.1 Caretaker talk

Caretaker talk (or motherese) is defined as the language directed at infants and children and the modifications which parents and others make when talking to children in order to help them understand the messages directed at them (Clark and Clark 1977). Such modifications are claimed to be simpler versions of standard adult-adult speech. It has been assumed, therefore, that caretaker talk differs from standard adult-adult talk in many ways:

i. The modifications which adults make are hypothesized to be syntactically 'simpler' versions of standard adult-adult speech in terms of syntactic complexity, choice of vocabulary and certain phonological features (Clark and Clark 1977). Hence they help young children decode messages directed at them.

ii. Caretaker talk is posited to be "roughly-tuned" to the child's current linguistic competence, but not finely-tuned. This would imply that caretakers do not adjust their language to the child's exact current level of linguistic competence (e.g., Cross, 1977, Newport 1975, Newport et al. 1977). Nevertheless, this rough-tuning tends to get more complex as the child grows although the syntactic complexity of the caretaker speech need not necessarily grow in exact parallel to the child's developing linguistic competence (e.g., Cross 1977, Newport et al. 1977, Andersen and Johnson 1977).

iii. The final characteristic of caretaker talk is that it is tied to the "here and now". That is, adult-child discourse relates mostly to the immediate environment in which the child lives, both temporal and spatial (Clark and Clark 1977, and Newport et al. 1977). This association with the here and now, however, weakens with the growth of the child. In other words, adult-child discourse gradually begins to incorporate associations, thought, implications, etc. from the outside world as well as the different verb-tenses necessary to refer to objects and events not present in the here and now.

Moreover, it has also been noted (e.g., Hess and Shipman 1965, Nelson 1973, Snow 1979) that for the input to have maximum uptake/effect (i.e., to be of maximum use in the language process), rough-tuning is of crucial importance because, if the talk is far beyond the child's current ability, it simply will not be comprehensible. Likewise, if it is aimed exactly at the child's current linguistic level, it will hardly be of any benefit to him/her, and will be boring. It is claimed therefore that the input is best attended to and understood by the child when it is pitched a little beyond the child's current level of linguistic competence.

2.1.2 Linguistic features of the input

Another type of input study in FLA has focused on the specific linguistic features of the language addressed to young children. In this subsection, I will report observations made at the levels of syntax, phonology, and semantics. The studies, being selective rather than exhaustive, are intended to show the general direction taken by most researchers.

i. Syntax: It is well-documented in the literature that most utterances addressed to children learning their mother tongue (MT) have been found to be well-formed (Snow 1971, Newport 1975, Cross 1977). Disfluencies have proved to be fewer when the addressees are children than when they are adults (Newport 1975). According to Long (1980), who challenges Chomsky's notion (1965: 58) that the input the child receives is degenerate, these findings show that "the corpus at the child's disposal is hardly

degenerate" (Long 1980: 3). It has also been shown that when adults talk to children, they unconsciously use shorter and more varied utterances (Nelson 1973), less complex and fewer sentence embeddings (Phillips 1970, Snow 1972), fewer adjectives and pronouns (Newport 1975), more imperatives and questions with the proportion of declarative statements increasing with the increasing age of the child (Newport 1975). The assumption is that this kind of talk is directed at the child to bring about interaction and, therefore, questions, orders/requests and so on feature prominently in adults' speech to children. Later the proportion of declarative sentences has been observed to rise considerably.

ii. **Semantics:** Semantically, adults' language directed at children is typically characterized as having a more restricted vocabulary, expressing a more restricted range of semantic relations (Snow 1977), and as tied to the here and now principle (Cross 1977, Clark and Clark 1977).

iii. **Phonology:** It has been noticed that speech directed at children, phonologically speaking, includes more exaggerated intonation and a higher speech pitch (Blount and Padgug 1977), frequent reduplication of syllables (e.g., *puff-puff*, *choo-choo*), clearer articulation, frequent pauses between utterances and an overall slower rate of speech (Newport 1975).

2.1.3 Adult-child interaction and FLA

FLA researchers agree that adult-child interaction displays the following characteristics:

i. Expansions (i.e., the repetition of the previous speaker's utterance): Expansions have been found to be prominent features of adults' conversations with children (Snow 1972, and Bloom, Lightbown and Hood 1975). These repetitions may be of both the child's and the adult's previous utterance. Caretakers, it is argued, depend on the feedback they receive from the child. Hence, with prelinguistic infants, interaction is assumed to be more difficult than with verbal children (Phillips 1973).

ii. Another characteristic of adult-child interaction is the "occasional question", as Brown and Bellugi (1964) termed it. This applies when the mother or the caretaker substitutes the miscomprehended word(s) with a Wh-question word, for instance:

Child: I want milk
Mother: You want what?
Child: Milk.
(from Brown and Bellugi 1964: 150)

This is important because such adult-child interactions are considered to be like "mini grammar lessons" but with the emphasis on communication rather than on teaching grammar to the child (Snow, 1977 and Brown 1977).

iii. A third characteristic of adult-child interaction is the use of high frequency of questions and imperatives used by adults as attention-getting devices, and the stress placed on creating and maintaining cooperative dialogues (Shugar 1978 and Keenan 1974).

In the light of these and other studies, notably Macnamara (1972, 1973), one can hypothesize that the child learns syntax through conversation, a conclusion which Long (1980) arrived at on his way to the further conclusion that conversational competence may determine the syntactic structures available to the child as input:

> "If this is the case [i.e., that conversational competence may determine the syntactic structures available to the child as input] we have another way in which adult-child interaction may promote first language acquisition...the child's current conversational competence...may predict the kind of linguistic input he or she receives" (Long 1980: 16).

One more striking observation recorded by Snow and Ferguson (1977) is that, in order to interact with children, caretakers (or adults) make use of prosodic cues such as higher pitch, lip-rounding, and special intonational patterns to call the child's attention to the language meant for him/her. Moreover, adults make use of extralinguistic cues such as gestures and demonstrations, and contextualize the new flow of information in

already framed references (i.e., moving from the known to the unknown so that meanings and uses of new words are related to known ones).

2.1.4 Input, interaction, intake and output in FLA

This subsection addresses two central questions: Do modified input and interaction make the input more comprehensible, thereby facilitating intake and promoting FLA? And is there a direct and significant relation between input and output?

As for the first question, two different kinds of findings in relation to input have been observed. On the one hand, Scovel (1969) and Curtiss (1980) have noticed that the absence of input makes normal language development impossible after the age of puberty. Sack and Johnson (1976) have concluded that the absence of modified input affects the normal linguistic development of children (as in the case of Jim, a hearing child with two deaf parents in their study who received (modified) input only from the outside world). Nelson (1973) concludes that language acquisition may be retarded if the input is 'poor', i.e., when it does not match the child's level of cognitive development. These studies imply that modified input facilitates interaction (because it is comprehensible), and interaction, in turn, promotes language acquisition. Hence, the absence of modified input/interaction retards the normal development of language acquisition. This is not to conclude, however, that interaction and input are the causative factors of FLA. Long (1980: 18) remarks:

> "While suggesting that modified input is indeed necessary for normal language development, none of these studies can be taken as evidence of a causal relationship between input, interaction and language acquisition."

On the other hand, the second finding appears, to some extent, to contradict the first. It has been found (Ochs 1982, Heath 1983, and Faltis 1984) that there are cases where the absence of simplified input does not necessarily affect or retard language development. For example, Ochs (1982) conducted a study on children in Western Samoa and Heath (1983) conducted a similar study on black children in the American

South. Both have found that neither group of children was exposed to simplified input (for cultural reasons). Simplification, in these societies, is viewed as an inappropriate speech behaviour on the part of the adult. Nevertheless, these children develop the same normal MT competence as other children.

Nevertheless, some FLA researchers (e.g., Snow 1979) have concluded that semantic interpretability (i.e., simplified input) and the relevance of the input (i.e., its rough-tuning) are two crucial factors in promoting language acquisition. It is not as yet clear, however, to what extent these factors affect or determine the route and the rate of FLA.

As for the second question (the input-output relationship), Brown (1973) found no positive correlation between the fluency of occurrence of a set of grammatical morphemes in the speech addressed to his subjects by parents and the order in which those forms appeared in the children's output, a finding which was confirmed by Block and Kessel (1980). Other studies have found that there is a positive relationship between input frequency and output frequency (e.g., Moerk 1980).

2.1.5 The Natural Order Hypothesis for FLA

It has been observed (Brown 1973, de Villiers and de Villiers 1978) that certain structures tend to be acquired early while others tend to be acquired late. Brown (1973), for example, conducted a longitudinal morpheme study on children acquiring English as their MT. He found that the children tended to acquire the progressive marker '-ing' and the plural marker 's' before they acquire the third person singular 's' or the possessive 's', which were acquired late. de Villiers and de Villiers (1978) confirmed Brown's findings in a cross-sectional study.

It is suggested, therefore, that the acquisition of grammatical structures proceeds in a more or less predictable way (Brown 1973, de Villiers and de Villiers 1978). This should not mean that the route of acquisition is invariant. To some extent, it varies

with every individual learner/acquirer. This variability is not significant: it is on the surface structure only (Ellis 1985a).

2.1.6 Conclusion and implications

In the light of these studies it is difficult to assess the influence of interaction, input, intake and output on each other and on first language acquisition. Nevertheless, it is possible to make broad generalizations on comprehension and performance in FLA. **First**, the linguistic input to a child acquiring a first language is both quantitatively and qualitatively different from standard speech addressed to normal linguistically competent adults. **Second**, normal children who successfully develop receptive ability in the acquisition of their MT, usually (but not necessarily) receive simplified linguistic input. **Third**, the quantity and quality of speech modifications vary in respect to the situation in which the child is engaged, his/her age, sex, conversational competence and stage of cognitive development. **Fourth**, this input is not degenerate. **Fifth**, variation in the nature of interaction, input, intake and output are related to the rate and route of language development, interlocutors and socioeconomic family background, as exemplified in the work of Snow (1972). **Sixth**, the absence of interaction could lead to the absence of simplified input and this might retard the development of language, especially after puberty. And **seventh**, the literature is neither clear nor consistent on the correlation between receptive processes and performance processes in FLA.

It may have been noticed that research on phonology, pragmatics and output has been relatively underrepresented. The explanation for this seemingly inadequate coverage is this. **First**, the literature on phonology in FLA is not so relevant to the acquisition of phonology in SLA because everybody is agreed that the acquisition features of phonology of the second language learner is unlike those in FLA. For example, the replacement of /k/ and /g/ with /t/ and /d/ in FLA as reported in the work of Jakobson (1949, 1968) has not been observed in SLA. **Second**, I have not talked about pragmatics very much because with the exception of the work of Bates (1976), there is little work on the acquisition of pragmatics in FLA; and, similarly, with the exception

of Thomas (1983), there is very little work on pragmatics in SLA. For that reason, I have not reviewed literature in the area of pragmatics although it is an important area. And **third**, although knowledge of the relationship between input data and output data in FLA may have both theoretical and pedagogical significance for SLA research (see Ch 3.1), it is not yet clearly described in the context of FLA.

Researchers have made use of the available findings in FLA and traced out their significant implications for studies of comprehension and performance in SLA (e.g., Wagner-Gough and Hatch 1975, Krashen 1981a,1982a and 1985, and Krashen and Terrell 1983) and in second/foreign language learning and teaching (e.g., Winitz 1981b and Blair 1982). Krashen (1981a, 1985) and Krashen and Terrell (1983), for example, found strikingly close similarities between FLA and SLA with respect to the hypotheses of simplified linguistic input, rough-tuning, and the natural order of acquisition. Hence, a Comprehensible Input Hypothesis (Krashen, 1981a, 1982a, 1985) and a Natural Order Hypothesis (Krashen and Terrell 1983) were proposed for SLA and second/foreign language learning and teaching.

2.2 Input and Interaction in Second Language Acquisition (SLA)

I will start this section by introducing, first of all, some terminologies relevant to the area under investigation. Then, I shall review research findings on input and interaction, and finally look at the role input and interaction play in SLA as discussed by several researchers.

It is well-established that **simple codes** are relevant to studying and understanding SLA (see below). Simple codes is a broad term which refers to four kinds of speech-types, **caretaker talk**, was detailed in the preceding section and three other types: (a) **Foreigner-talk** (FT), defined as "the modifications native speakers make with less than fully competent speakers of their language" (Krashen 1982a: 24). That is to say, talk featuring the adjustments and 'simplifications' made by NSs when talking to NNSs

(Krashen 1985: 8). (b) **Teacher-talk**, defined as "foreigner-talk in the classroom, the language of classroom management and explanation, when it is in the second language" (Krashen 1982a: 24). And finally, **interlanguage talk** (IT), defined as "the speech of other second language acquirers, often that of the foreign student peer group" (Krashen 1981a: 121).

These speech-types are considered to be qualitatively different from standard NS/NS adult speech. In the context of SLA, simple codes are normally described as having the following not necessarily mutually exclusive features: **(a)** They are "roughly-tuned" to the student's/foreigner's current level of linguistic complexity (e.g., Henzl 1979, Krashen 1985, Kleifgen 1985); **(b)** They are simplified and modified versions of standard adult-adult speech in terms of syntactic complexity, choice of vocabulary, and phonological features (e.g., Ferguson 1975, Andersen 1977, Henzl 1974, 1979, McCurdy 1980, Wong-Fillmore 1985); **(c)** They are associated with the (immediate) concerns of the language learner (Kleifgen 1985). The relevance of these speech-types has been seen to facilitate or promote SLA in that they encourage intake by making it more comprehensible (Krashen 1985: 4 ff.); and **(d)** They are intended for communication, not language teaching (Clark and Clark 1977).

2.2.1 Empirical studies on input and interaction in SLA

Long (1981) labels the formal characteristics of NS to NNS talk INPUT, while he labels functional characteristics INTERACTION. The former include features of the specific linguistic input which NSs use at the levels of phonology, lexis, syntax and semantics. The latter consists of the specific discourse functions performed by NSs. These include more use of here-and-now topics (i.e., context-embedded topics), more topic-initiating moves, more confirmation checks, more comprehension checks, more clarification checks, more self-repetitions, more other-repetitions, more expansions, and more responses tailored to the NNS's level of proficiency. In what follows, I will separately consider the features of NSs' input to and their interaction with NNSs, and the features of the discourse used by both NSs and NNSs in natural and in classroom environments.

Subsequently, I shall compare and contrast the findings of the major studies in these areas. Finally, I will look at interlanguage talk and its role in SLA.

2.2.1.1 Natural setting

(a) Features of input

At the phonological level, NSs' input to NNSs is frequently marked by a slow rate of delivery, loudness, frequent pauses, emphatic stress, exaggeratedly clear articulation, occasional additions of a vowel after a word-final consonant, and a few repetitions (such as '*the beer...the beer tastes terrific*') (e.g., Ferguson 1975, Andersen 1977, McCurdy 1980, Freed 1980, Chaudron 1983, Cervantes 1983). At the lexical level, the input is frequently marked by occasional uses of words from other languages (Ferguson 1975), substitutions of items by synonyms or paraphrasing (Ferguson 1975, McCurdy 1980, Andersen 1977), lexical substitutions and the use of shorter words (Arthur, Weiner, Culver and Thomas 1980). At the syntactic level, input is characterized as being simpler than in standard NS/NS discourse (Wong-Fillmore 1976, Freed 1980) and non-standard in that the modifications NSs make are normally realized via omissions (e.g., deletion of copula, articles, constituents, auxiliaries, etc.), expansions (e.g., insertion of a subject pronoun, such as *you* go now), and replacements and rearrangements (Ferguson 1975, Andersen 1977, McCurdy 1980, Hatch, Shapira and Wagner-Gough 1975, Wong-Fillmore 1976). Also input is characterized by the absence of tense-marking, ellipsis, shorter and less complex utterances, higher proportions of questions and imperatives than statements, shorter mean length of utterance (MLU) and fewer relative clauses (Freed 1980, Scarcella and Higa 1981).

For example, Ferguson (1975) reported the findings of an indirect study of FT conducted in a sociolinguistic setting. Subjects were asked to rewrite ten English sentences as they would use them while addressing illiterate non Europeans who spoke a language other than English. Based on his analysis of results, Ferguson specified three areas of difference between standard English and FT. In phonology, FT was

characterized by slow rate of delivery, loudness, clear articulation, pauses, emphatic stress, exaggerated pronunciation and a few repetitions. In lexis, there were occasional use of words from other languages, substitutions of items by synonyms or paraphrasing. In syntax, modifications were generally realized via omissions, expansions and replacement or rearrangement. Ferguson concluded that there were plenty of ill-formed utterances in FT.

On the other hand, there are other studies (e.g., Freed 1980, Scarcella and Higa 1981, Arthur et al. 1980, Campbell, Gaskill and Vander-Brook 1977) which found no syntactic adjustments or ill-formed sentences of the type described above although like other studies they found that NSs' input was simpler, characterized by a lower number of words per T-unit, a significantly lower number of statements than of questions, and shorter and less complex utterances generally.

Freed (1980), for example, compared the speech of NSs of English addressing adult NNSs from a variety of L1 backgrounds to the speech of the same NSs to the investigator. Unlike other studies, Freed did not find a single ill-formed sentence in the FT corpus. She found that speech addressed to NNSs shared many of the formal properties of linguistic input to children. Namely, it was clearly articulated, the utterances were shorter and syntactically less complex, with a higher ratio of questions to statements in the NS/NNS interactions than in the NS's speech to the researcher. It did differ, however, as a function of the NNS's proficiency in English; i.e., utterances to more advanced NNSs were longer and lexically more complex.

The differences between the findings of Ferguson's (1975) study and other studies such as Freed (1980) may be due to the choice of participants (NSs and NNSs), their educational backgrounds, their age differences, etc. For instance, Ferguson's findings could be the result of his choice of NSs who never spoke well-formed standard English. They could also be due to the limited proficiency in English of the NNSs with whom the NS participants were supposed to interact. This is because to facilitate interaction with the limited in English proficiency (LEP) NNSs, NSs' input to such NNSs is over

simplified in many ways to the extent that it may contain some deviant utterances such as the ones encountered in Ferguson's (1975) study (Long 1980, Kleifgen 1985).

(b) Features of interaction

Studies which have looked at interactional devices in foreigner talk (i.e., NSs' talk to NNSs in informal or naturalistic settings) have observed several of the same processes as those found between children and their caretakers, such as the use of repetitions, expansions, context-embeddedness and tailoring of input. Long (1980: Ch 1) reviews previous findings related to interaction in SLA and generalizes the findings as follows. (i) NSs use clarification devices to facilitate comprehension and participation by NNSs and also to initiate a topic and maintain it. (ii) Conversations normally are related to the immediate concerns of NNSs. (iii) Topics are dealt with briefly and simply when compared to NS/NS interactions. And (iv) NSs use more comprehension checks, confirmation checks, clarification requests, and recasting of questions (e.g., substitution of yes/no questions for WH questions) (Hatch 1978b), lexical substitutions (Chaudron 1979), self- and other-repetitions (Arthur et al. 1980, Chaudron 1979, Hatch et al. 1975), and decomposition (defined as breaking the task down by the NS into two parts to facilitate comprehension and then recasting the original question) (Long 1980).

It is worth mentioning that the high frequency of questions in FT to NNSs may reflect the type and complexity of the task(s) used. For instance, successful completion of tasks such as the picture-dictation and the jigsaw tasks requires the provision of more accurate and precise information and this results in higher frequency of questions and clarification requests than the completion of, for instance, an opinion-exchange task whose successful completion requires optional rather than precise information. Similarly, the high frequency of questions may reflect an aspect of the nature of NS/LEP NNS interaction. (LEP = limited in English proficiency, Wong-Fillmore 1985: 17.) In other words, it is probably the case that in order to get LEP NNSs to speak, the NS partner must ask a question which invites the NNS to participate in the conversation and this enables him/her (i.e., the NNS) to provide a specific piece of information,

whereas open-ended conversation may not exercise as much demand on the NNS to engage in a conversation in the TL.

(c) Discourse analysis

It has been claimed that the input a NNS receives is partially determined by learners themselves in such a way that the kind of feedback he/she provides largely determines the nature of subsequent input from the native speaker (Wong-Fillmore 1985). It is claimed, therefore, that the NS and the learner jointly construct discourse together.

Analysis of NS/NNS discourse shows that both learner and NS strive together to build a communicative channel and to overcome difficulties which are likely to arise. In other words, both learner and NS negotiate the meaning. As far as the NS is concerned, he/she uses strategies and tactics (Long 1983a). Strategies are defined as conversational devices used to avoid trouble (e.g., checking comprehension and self-repetitions). Tactics are devices used to repair troubles (e.g., requests for clarifications, other repetitions). Long also suggests that there are additional devices such as speaking at a slow pace, repeating utterances, or stressing key words that can serve as both tactics and strategies.

The learner, on the other hand, contributes to the negotiation of meaning by, for example, giving clear signals that he/she has understood or not understood the message, and by generating more input and interaction. In this connection, Seliger (1975) distinguishes between two kinds of learners: those who manage to generate a high level of second language input and those who fail to do so. Seliger calls the former "high input generators (HIG)" and the latter "low input generators (LIG)". Related to the notions of HIG and LIG are Corder's (1978) distinction between risk-taking learners and risk-avoiding learners. By taking risks (e.g., paraphrasing, using circumlocution, guessing, using word-coinage, etc.), the former generate more input and interaction, whereas by avoiding risks (e.g., opting out, saying less, avoiding certain topics), the latter generate less input and less interaction.

Discourse analysis predicts that as a result of the negotiation of meaning, particular appropriate types of input and interaction are used. As we shall see later, Krashen and Long hypothesize that the negotiation of input is what makes it comprehensible, and this promotes SLA.

2.2.1.2 Classroom setting

The studies below differ from those above in that they examine contexts in which normally one speaker addresses a larger group of people. That is, interactions are normally one-to-many rather than one-to-one. Nevertheless, the findings are partially consistent with those of studies in natural settings in that teachers use linguistically simpler language when addressing NNS learners in the classroom.

(a) Features of input

A large number of studies (e.g., Wong-Fillmore 1985, Henzl 1979, Hatch et al. 1975, Andersen 1977, Trager 1978, Long 1980, 1983b, Long and Sato 1983) have been conducted in classroom settings. By and large, it might be generalized that teacher-talk (TT) has the following linguistic characteristics. At the phonological level, speech is delivered slowly, with clearer pauses, with louder and clearer phonological features, with the use of extra-stresses and frequent high-rising tones (e.g., Henzl 1979, Trager 1978, Chaudron 1978, 1979). At the lexical level, there are frequent uses of simpler lexical entries, synonyms, fewer compound words, paraphrasing of idioms into non-idiomatic forms, the use of cohesive devices, repetitions, and parallelism (Trager 1978, Henzl 1979, Chaudron 1979). At the stylistic level, neutral vocabulary is used more than socially, regionally, or emotionally marked expressions. Stories are made more concrete by avoiding indefinite pronouns and by making use of concrete references more than abstract ones (Henzl 1979 and Hatch 1983b). At the syntactic level, NS teachers use linguistically simpler language with less complex sentences, a preference for the present indicative tense, active verb forms and the avoidance of conditional and passive constructions (e.g., Henzl 1979, Chaudron 1979).

Henzl (1979), for instance, had eleven professional language teachers (five of Czech, three of German and three of English as a second language) tell two stories, once to classes of beginners, once to advanced students and once outside the classroom to NSs of their language. Six speech samples were therefore analyzed for each teacher. Henzl found that speech addressed to NNSs was slower, louder, more clearly articulated, and with longer pauses at constituent boundaries. At the lexical level, she found simpler lexical entries, the provision of synonyms, fewer compound words, and paraphrasing of idioms into non-idiomatic forms. Stylistically, neutral vocabulary was used more than socially, regionally, or emotionally marked expressions. Stories were made more concrete by avoiding indefinite pronouns, and by using imaginary proper names and locations instead (e.g., *A gentleman walking in the street noticed another one approaching him from the other side..* becomes *Mr. Brown is walking in the University Avenue. Mr. Brown sees Mr. Johnson.* (Henzl 1979: 162.) Syntactically, speech to NNSs was characterized by the use of well-formed, shorter, less complex sentences, with longer MLUs for advanced than for beginners classes. Moreover, speech showed preference for present tense, indicative and active verb forms and avoidance of conditional and passive construction, less inflectional morphology, less diversity in case-marking and no non-standard or ungrammatical constructions, a finding which Henzl attributes to the classroom setting.

(b) Features of interaction

It has been speculated that teachers make interactional modifications similar to those observed in motherese and foreigner talk in order to facilitate communication with their students (Long 1983a, Krashen 1985, Ellis 1985a, 1985b, Lynch 1988). These include comprehension checks, self- repetitions, tuning the input and using context-embedded topics.

Several studies have shown that utterances directed at NNS students by their teachers are roughly-tuned to the students' proficiency level in the TL (e.g., Hirvonen 1985, Wong-Fillmore 1985, Kleifgen 1985, Ellis 1985b). For example, Kleifgen has studied

input and interaction in the case of a teacher and four pupils whose English ranged from zero to native speaker level. She noticed that the teacher skillfully tailored her input to fit the level of proficiency of her students. In particular, she found the teacher's length and complexity of utterances decreased for beginners and increased for more advanced students.

Kleifgen (1985) also found that teacher's language to NNSs was more context-embedded (i.e., tied to the immediate concern of the learner), whereas her input to Johnny, the native speaker pupil, was less dependent on the immediate environment in which he was involved. However, the teacher's input progressively shifted to more complex and less context-dependent structures with NNSs who showed improvement over time. Kleifgen concludes:

> "The study also corroborates the ESL and EFL classroom studies conducted by...Henzl (1974, 1979) in which teachers vary their speech adjustments according to the level of the students' competence in the target language" (Kleifgen 1985: 68).

Unlike other classroom investigators of NS/NNS interaction, Kleifgen found that teacher talk directed at the NNS students contained deviant utterances such as deletion of determinants, copula, auxiliary, pronouns and verbs. However, these deviant utterances and deletions were found to diminish according to the increased linguistic proficiency of the children. In particular, deletions featured most in utterances directed at Kazo (the boy who spoke almost no English), less in utterances directed at Fatima (the girl who was able to communicate to a limited degree), least in utterances directed at Siti (the girl who demonstrated more proficiency than the first two NNSs), and none to Johnny, the NS of English boy (Kleifgen 1985: 61).

This finding shows that FT may be used in the classroom as a way to achieve successful communication with NNSs. The most likely explanation is that in order to achieve successful communication with the less proficient NNSs - even in the classroom situation - the NS teacher must simplify his/her input even if this meant that his/her input features deviant utterances such as the ones found in Kleifgen's study.

Ellis (1985b) studied the features of NS/NNS interaction. His subjects were a brother (11 years old) and a sister (13 years old) learning ESL. The study lasted for one academic year. Data for analysis were obtained from a series of interview sessions between the two children and their regular classroom teacher.

As in the case of other studies (e.g., Henzl 1979, Kleifgen 1985, Wong-Fillmore 1985), Ellis found that teacher's formal speech adjustments were sensitive to the general level of proficiency of his students. For example, teacher's self-repetitions were fewer in the later recordings, whereas expansions were more numerous. The decrease in teacher self-repetitions in later recordings may also be due to the increased level of familiarity between the students, their teacher and the possible range of topics for conversation. This enables the teacher to provide the 'right' input and make the 'right' modifications which suit the proficiency level of his students which makes the frequent use of self-repetitions redundant. (See also Gass and Varonis 1984, for a similar discussion.)

In conversations, the teacher used far more questions requiring object identification in early sessions than in later ones. It was hypothesized that some interactional features do change over time according to the proficiency development of learners. Other interactional features, such as comprehension checks and clarification checks did not change as the learners' competence grew. Ellis argues that this might be due to different factors. One explanation is that this might reflect the idiosyncratic interactional style of the teacher (Ellis 1985b: 76).

Wong-Fillmore (1985) suggests that tailoring the input to fit the level of proficiency of individual students involves repeating the single word or expanding it by way of confirmation that the student's utterance is acceptable. Such expansions help students see and hear what their short utterances look like in their full forms. This implies that adjustments in form and content of speech to learners are made *interactively*. It includes the learner's signaling when adjustments are needed and when they are not (Long 1981). The teacher and the student negotiate the form and the content of the message until it is comprehensible to the latter.

More recently, Lynch (1988), in a comprehensive study, videotaped NS/NS and NS/NNS interactions. The NNSs represented three proficiency levels (advanced, intermediate and elementary). The aim of the study was to look at the occurrence of spontaneous/natural modifications of discourse between NSs and NNSs (where 'natural grading' of the NSs' speech adjustments might occur) and to investigate whether these modified interactions of the discourse assisted other L2 learners' comprehension ability. Discourse modifications were analyzed using task-focused interactions between NSs and NNS listeners.

The results of the study showed that NSs did modify their output to suit the proficiency/comprehension level of their interlocutors (NSs and NNSs). The results also revealed ways which enabled foreign language learners to recognize how they can elicit or exploit potentially helpful adjustments in speech addressed to them by native speakers (p. 326). More importantly, however, the findings revealed that the modifications which NSs made in the course of the interaction with the NNSs and the comprehension achieved by the elementary learners of English were also helpful to the learners who later watched the recordings in the L2 classroom. Lynch calls this the "carry-over effect" of discourse adjustments (Lynch 1988: 322). In other words, the sort of adjustments made to the original NNS listeners were also exploited subsequently by secondary listeners of the same linguistic level. The study also showed that the secondary NNS listeners' comprehension of the recordings was greater when they watched NS/NNS interactions rather than NS/NS ones.

(c) Discourse in the classroom

Classroom interaction has been seen to be a major variable affecting SLA in formal settings. Researchers have, therefore, focused their investigations on the process of what goes on in the classroom by observing, collecting and analyzing data from the classroom itself (e.g., Gaies 1983, Long 1983b, Long and Sato 1983, Ellis 1984a, Sinclair and Brazil 1982).

One variety of classroom discourse analysis has focused on what is called the **three-phase discourse**, known as initiates, responds, and feedback (IRF) (Sinclair and Coulthard 1975, Sinclair and Brazil 1982, Coulthard, 1985). The three phase-discourse typically consists of exchanges in which the teacher initiates, the student responds, and the teacher supplies feedback. For example:

Teacher: Can you tell me why do you eat all that food?	initiates
Student: To keep you strong.	responds
Teacher: To keep you strong. Yes. To keep you strong.	feedback

(from Sinclair and Coulthard 1975: 21)

Coulthard (1985) argues that this three-move eliciting structures are beneficial inside the classroom for two reasons:

> "Firstly, answers directed to the teacher are difficult for others to hear and thus the repetition, when it occurs, may be the first chance some students have to hear what their colleagues said; secondly, and more importantly, a distinguishing feature of classroom discourse is that many of the questions asked are ones to which the teacher-questioner already knows the answer, the intention being to discover whether the pupils also know" (Coulthard 1985: 125).

Coulthard notes that interactive acts take various forms. The initiation options could be informative, directive or elicitative; the appropriate responses are to acknowledge, react or reply; and the follow-up options are to accept, evaluate or comment. For example:

Teacher:	What does the food give you?	initiate (elicit)
Student:	Strength.	response (reply)
Teacher:	Not only strength we have another word for it.	feedback (comment)
Student:	Energy.	response (reply)
Teacher:	Good girl, energy, yes.	feedback (accept)

(from Coulthard 1985: 125)

Ellis (1984a) examines a number of different types of classroom discourse. He distinguishes three basic kinds of pedagogic goals: (a) core goals, which relate to the explicit pedagogical purpose of the lesson (e.g., teaching specific aspects of the TL);

(b) framework goals, which relate to the organization requirements of the lesson (e.g., managing students' behaviour); and (c) social goals, which involve the use of language for more personal purposes (e.g., imparting private information, socializing, etc). For instance, Ellis argues that framework goals are normally characterized by the frequent use of directives, to which learners respond non-verbally.

These analyses of classroom discourse investigate the joint contribution of teacher and student in their efforts to communicate. It is hoped that findings may shed light on how meaning is negotiated in a classroom context and how input is shaped in such a way as to meet the requirements of the student's proficiency level. It is doubtful, however, whether sufficient negotiation is possible in the classroom, because of the one-to-many linguistic environment.

2.2.1.3 Natural setting and classroom setting compared

In recent years, there has been a marked tendency to make the classroom as communicative as possible (e.g., Brumfit 1980, 1984, Johnson 1982, Brumfit and Johnson 1979, Widdowson 1984, 1990). As part of this trend, several new approaches to foreign language teaching and learning have been introduced to replace the traditional ones. More specifically, traditional approaches such as the grammar-translation method and the audio-lingual method have been seen to be rather artificial and to deprive students of taking an active part in the language lesson and of using authentic L2 knowledge. More informal, communicative approaches have been introduced instead in which the learner is treated as an active participant in a language classroom where communicative, authentic language is used.

The aim of this section is to draw a comparison between natural settings and classroom settings as sources of input/interaction for SLA. The basic differences and similarities will be discussed in an attempt to find ways of making the classroom setting more communicative, natural and authentic source of language use.

First of all, I will briefly summarize the basic differences observed in input and interaction between natural settings and classroom settings. The **first** main difference between foreigner talk (FT) and teacher talk (TT) is that while both are simplified versions (in both form and content) of standard adult-adult speech, the classroom setting has generally been conducive to simplified but well-formed input, the work-place to ungrammatical FT (Long 1980: 47). **Second**, whereas interaction in natural settings is normally one-to-one, it is one-to-many in the classroom environment. This difference is significant because, as Long (1983b) and Long and Sato (1983) note, whereas comprehension checks are frequent in the classroom, confirmation checks and requests for clarification are less so. Confirmation checks and requests for clarification (unlike comprehension checks) are used as feedback after a teacher utterance. But since the teacher normally dominates the talk in the classroom, students have few opportunities to speak. **Third**, as Snow and Hoefnagel-Hohle (1982) conclude, speech directed specifically to NNSs depends largely on their demonstrated level of proficiency in the TL. Therefore, the absence of feedback leaves the teacher in the dark as to the appropriate level of proficiency of his/her individual students. The normal organization of the classroom does not give a proper chance for clarification requests and confirmation checks and this deprives the teacher of the possibility of tuning his/her input to meet students' proficiency levels. These limited opportunities for the negotiation of meaning considerably reduce the necessary input (Ellis 1985a, Krashen 1985). **Fourth**, Macnamara (1973: 250-252) had already speculated that there will still be significant differences between the two settings, even if the classroom setting provides full opportunities for the negotiation of meaning. He argues that the kind of motivation that occurs in the classroom is completely different from that found in natural settings. Unlike natural settings, in a formal classroom situation it is rare for either the teacher or the student to have anything to say to each other which is so important that they are willing to improvise and guess at each other's meanings and messages.

These differences must not be taken as absolute, however. Input and interaction in natural and classroom environments have much in common: they are simplified versions

of standard adult-adult NSs speech, they are roughly-tuned to the student's/L2 user's current level of competence and they are both context-embedded. Ellis (1985a), for instance, writes:

> "...although there are clear and obvious differences between natural and classroom environments, it would be wrong to overemphasize these differences. Natural environments themselves can vary enormously in the types of input they afford. Some learners may not be able to take part in potentially facilitative interactions. Also classrooms differ in the kinds of discourse they provide... Rather than treat natural and classroom environments as opposites, it would be more accurate to see them as providing the same discourse types in different degrees. That is, the same kind of interaction can take place in both, but because of basic differences to do with the numbers of the participants and the physical arrangements, some types of these interactions are more frequent in one setting, and other types in the other" (Ellis 1985a: 150).

Ellis believes that both foreigner talk and teacher talk are influenced by variables such as the topic of the conversation, age of participants and the proficiency level of learners. As such, they must not be considered static phenomena with a fixed set of rules, but rather as dynamic and changing according to the various situational factors (p. 133). Long (1980) believes also that it is not one variable but several which determine both the nature and the amount of NS's speech modifications. Long identifies three variables the combination of which determines the nature and the number of modifications: setting, task, and the importance attached by both parties to successful communication (Long 1980: 47).

In short, differences can be seen both in terms of quantity and quality between natural and classroom environments as sources of input and interaction. In terms of quantity, one-to-one interaction in a natural environment provides greater amounts of input and opportunities for interaction than a one-to-many environment. In terms of quality, one-to-one interactions enable NSs to tune their input to the NNS more accurately than one-to-many interactions do.

If these differences in quantity and quality of input and interaction affect SLA, then the evident conclusion one can draw from this comparison is that the most successful language classroom is the one which gives its students better opportunities for more negotiated input and interaction. It would be appropriate, hence, to look at the various types of classroom settings to see which of these resembles natural environments as a source of negotiated input/interaction for SLA. Table 2.1 below summarizes the main characteristics of a number of these setting-types:

Type of classroom setting	**Principal Characteristics**	**Comparison with natural setting**
1 The foreign language classroom	Focus likely to be on language form, rather than meaning. L2 unlikely to be used for genuine social purposes.	Potentially least like a natural setting - little negotiation of meaning.
2 The second language classroom (e.g., ESL)	Many interactions will still focus on form, rather than meaning. L2 functions as a medium of instruction as well as goal - hence will be used for wider range of discourse than in (1).	More like a natural setting - some chance for negotiation of meaning.
3 The subject classroom (i.e., learner is placed in a classroom with native-speaking children).	The focus will be on meaning, rather than form. Input unlikely to be adjusted, unless number of L2 learners high. IRF exchanges likely to predominate.	Will resemble 'exposure' in natural setting (i.e., input which has not been modified)- but very little negotiation of meaning.
4 The bilingual classroom (i.e., where L2 learners receive instruction through both L1 and L2).	Mixed focus- sometimes on form, sometimes on meaning. No need for learners to attend to L2 if the same content is taught in L1 and L2- hence no input. Adjusted input will occur if L2 used to teach different subject content.	Potentially strong resemblance to natural setting - if learners have to attend to L2. Negotiation of meaning likely.
5 The immersion classroom (i.e., where a class of L2 learners are taught through medium of L2).	Focus will be on meaning in L2 subject lessons. Input likely to be simplified. IRF exchanges may still predominate.	Strong resemblance to natural settings. Plenty of opportunities for negotiation of meaning, particularly if teaching is learner-centred.

Table 2.1: Input/interaction characteristics of different types of classroom setting (from Ellis 1985a: 151)

The Table clearly shows that some approaches are closer to natural settings in terms of the kind of opportunities they provide for students than other approaches. Ellis comments:

> "From this it can be seen that the immersion classroom and in some cases also the bilingual classroom are more likely to closely resemble natural environments in that the kind of discourse observed there is more likely to be characterized by the negotiation of meaning" (1985: 150-151).

Similarly, Wong-Fillmore (1985: 35) speculates that the excellence of schools which provide immersion programmes lies in the fact that they develop both academic and second language skills simultaneously.

2.2.1.4 Interlanguage talk

The third type of simple codes available to L2 learners is interlanguage talk (IT), defined as the speech and the input which a learner receives from his/her classmates (peer group). There are some named methods, such as community language learning (CLL), which encourage such input and there are some classroom procedures, such as role-play and problem-solving activities, which predict that IT is crucial for language learning. Some other methods avoid it completely (e.g., the audio-lingual method).

Long (1975) and Long and Porter (1985) discuss the possibility of group work including in-class interlanguage talk as a step towards providing more opportunities for using language in classroom situations in terms of quantity of input and interaction. Long (1975) argues that group work provides more possibilities for role-playing, problem-solving exercises and exploratory talk (defined as language used for communication rather than for mechanical production of practised verbal formulae, as in a drill situation). The point is that it is by virtue of such exercises which normally create information-gaps, that students are urged to resort to exploratory talk. It has also been argued that humanistic approaches to language teaching and communicative methodology encourage exploratory talk as part of human curiosity to interact.

As a source of input, interlanguage talk has unfortunately been largely overlooked. As Krashen (1981a: 121) comments: "It [interlanguage talk] is, of course, fairly well described in the literature, but not dealt with as input." In fact, there is surprisingly little research done on the role of interlanguage talk in SLA. It is not clear, therefore, whether it is helpful or harmful (Krashen 1985: 9). More research is required to show whether this kind of input facilitates or hinders SLA, either in the initial stages or in subsequent stages. The importance of studying the effects of this kind of input is imperative if we want to steer language use in classroom settings towards more communicative, authentic and natural use of the TL. In fact, a major pedagogical goal in recent years has been to provide in-class activities which will provide sufficient practice in the various communicative functions of language.

2.2.1.5 Summary and conclusion

The findings of studies on input and interaction in SLA may be summarized as follows. (i) NSs' input to NNSs is a linguistically simpler variety of standard NS/NS speech. In some cases (naturalistic settings), the input includes non-standard speech features; in other cases (instructional settings), the input is almost always well-formed. (ii) Like FLA, speech modifications by NSs (especially in naturalistic settings and immersion schools) are motivated by communicative rather than pedagogic needs. Such modifications are claimed to be the product of negotiation by both NSs and NNSs. (iii) Input is tailored (roughly-tuned) to the student's/L2 user's current proficiency level in the TL. (iv) The input is also associated with the immediate concerns of the student/L2 user. (v) SLA is affected by variables such as age of participants, proficiency level, topic of discussion, task and setting. (vi) There are clear differences between naturalistic and instructional settings as a source of input and interaction both in terms of quantity and quality. (vii) And finally, although interlanguage has generally been seen as a potential source of comprehensible input and as facilitating interaction, it has not been sufficiently researched as such.

So far my goal has been to describe and explain the different types of input and interaction both in naturalistic and instructional settings. But the most important question is to find whether and to what extent the quantity and/or the quality of input and interaction promote SLA. And, if so, it must be shown what aspects of these facilitate SLA, and how. The following section will focus on these issues.

2.2.2 The role of input and interaction in SLA

To start with, a distinction must be drawn between **input** and **intake.** This distinction is crucial for reasons that will become clear shortly. Input is defined as the material (data) available to the L2 learner and the way in which this is presented to him/her; intake is the portion of that data which is processed by the learner and assimilated in his/her interlanguage system. It is only when input becomes intake that SLA may take place (Corder 1978, Krashen 1981a, 1985). This implies (a) not all that is heard is processed (i.e., qualifies as intake) and (b) there is no necessary connection between what we teach and what is learned. Corder (1978: 81-82) speculates that what is learned is determined by the learner's current state of interlanguage:

> "What elements are, in fact, processed from the data that is available is determined by what the current state of the learner's interlanguage grammar permits him to take in at that moment."

According to Krashen, intake is defined as "input that is understood" (Krashen 1981a: 102). To him, intake (understanding of input) is comprehension itself, which is "at the heart of the language acquisition process" (p. 102). It follows, then, that any second/foreign language teaching method or approach is a failure if it never enables the input it provides to become intake. In Krashen's framework, intake is synonymous with comprehensible input. That is, *intake is input which is comprehended: hence it is comprehensible input.* Therefore, intake (comprehensible input) or what Krashen sometimes terms "utilized primary linguistic data" (1981a: 46) is fundamental for acquisition. In fact, many of Krashen's arguments centre on describing ways of enabling input to become intake, as we shall see in 2.2.2.1 (c) below.

These arguments sound logical and convincing. The important questions to be asked, however, are: How does input qualify as intake? (How) does the L2 learner select from the input/output available? What are the processes of selection? Are they to do with the way input is presented? Or with individual learner factors (such as attitudes and motivation)? Or with the nature of internal processing systems? In fact we have no clear answers to any of these questions. For example, very little is known as to how learners select from the input data they receive, or the extent to which internal mechanisms of selection determine the quantity and/or the quality of selection. Studying how input qualifies as intake presupposes consideration of the nature of internal processing mechanisms. Only then, might one get better insights as to the possible answers to these questions. For the time being, I will look at the various suggestions that have been made as to the role of input and interaction in SLA.

2.2.2.1 On the route of SLA

Some researchers argue that there seems to be a natural order of development of L2 learners' grammatical knowledge in SLA (e.g., Hatch 1978b, 1978c, Krashen 1985, Krashen and Terrell 1983). This does not preclude the contribution of input to this natural route. For example, Hatch (1978b, 1978c) argues that it is possible that the natural sequence is the result of standard input derived from exchanges in which L2 learners take part. And so it is the product of the way in which conversations between NSs and NNSs are organized. She suggests that the natural sequence of SLA may be a reflection of the growth of such conversations:

> "...one learns how to do conversations, one learns how to interact verbally, and out of this interaction, syntactic structure develops" (Hatch 1978b: 404).

A number of explanations have been advanced to account for the effect of input and interaction on the route of SLA:

(a) Formulaic speech

This is defined as ready-made chunks of speech given to students to be learned or memorized as unanalyzed wholes (Hatch 1983b). Hatch claims that chunks such as 'a little bit' and 'get a ticket' may serve both an immediate communicative purpose and a long-range use (as analyzed pieces of language) when the learner has the chance to break down these chunks into their constituents. As such, formulaic speech may contribute to the route of SLA by providing raw material for the learner's internal processing systems.

(b) Vertical structures

Vertical structures are defined as "learner utterances which are constructed by borrowing chunks from the preceding discourse and then adding to these forms the learner's own resources" (Ellis 1985a: 306). The argument for vertical speech was first proposed by Wagner-Gough (1975) who argues that such vertical structures may be used immediately, or may be stored for later use. Ellis (1984a) provides an example of how vertical structures mechanism operates:

Teacher: Take a look at the next picture.
Pupil: Box.
Teacher: A box, yes.
Pupil: A box banana.
(Ellis 1984a: 14)

The pupil's second utterance consists of a repetition of the first one plus an extra noun (banana). The utterance has been constructed vertically. This notion of vertical structures relates to what Long and Sato (1983) term 'collaborative discourse.' This refers to the L2 learner's reliance on his/her interlocutor's previous utterance, which enables the learner to keep the channel of communication open, maintain discourse, and thus promote SLA.

Ellis (1985a: Ch 6) explains how the notions of vertical structures and collaborative discourse account for some features of learner's output. He predicts that these arguments can account for the "no + v"-type utterances (such as, *no open the door, no tell him*) which are so common in early SLA. The speculation is that the learner first adds *no* to the previous chunk of language and then, when progress is made, starts to delete, substitute and add features more appropriately.

(c) Comprehensible input

This is Krashen's position, which is probably the most detailed account yet advanced of how input and interaction affect the route of SLA. His arguments have enjoyed considerable prominence in SLA research. However, Krashen's accounts and speculations have attracted challenge as well as support.

Krashen (1981a, 1982a, 1985), among others (e.g., Long 1983d, Terrell 1982), is the prime mover of the comprehensible input explanation for SLA. His arguments for the role of comprehensible input are presented in the form of **The Input Hypothesis**, one of five hypotheses which together constitute Krashen's Monitor Model for SLA. Krashen argues that the Model with its five hypotheses constitutes "a theory with a consistent and interrelated hypotheses that would account for all phenomena in second language acquisition research and practice" (1983: 135). As such, the Monitor Model has been defined by Krashen as a system, not just a sum of hypotheses. (For a detailed review of the Model, see Krashen 1981a, 1982a). In order to understand the input hypothesis, a brief summary of the other four hypotheses of the Monitor Model is required.

The Learning-Acquisition Hypothesis (hypothesis 1) claims that there are two independent ways of developing ability in a second language: acquisition and learning. Acquisition is a subconscious process similar to the process children utilize in acquiring their first language. Learning is a conscious process that results in knowing about language. The two abilities are not combinable, i.e., what is learned does not become

acquired. Language is generated by acquired competence, while the learned competence acts merely as a monitor. **The Natural Order Hypothesis** (hypothesis 2) states that we acquire the rules of language in a predictable order, such that some rules tend to be acquired early and others late. The order is largely independent of the order in which rules are taught in language classrooms. **The Monitor Hypothesis** (hypothesis 3) states that learning (i.e., conscious knowledge) serves only as an editor or monitor for one's productive ability. Such monitoring interferes only with consciously learned (but not subconsciously acquired) knowledge. **The Affective Filter Hypothesis** (hypothesis 4) is defined as a mental block which, when raised, prevents acquirers from fully utilizing the comprehensible input they receive for language acquisition. When it is 'up', the acquirer may understand what he/she hears or reads, but the input will not reach the Language Acquisition Device (LAD) (Chomsky 1976). Put another way, if the affective filter is 'up', however comprehensible may be, the input will not reach the LAD because the acquirer needs to be 'open' to the input (Krashen 1985: 3). The affective filter is at its lowest level when the acquirer is involved with the content rather than the form of the message.

The Input Hypothesis (hypothesis 5), in terms of which Krashen defines comprehensible input, states:

> "Humans acquire language in only one way - by understanding messages, or by receiving comprehensible input. We progress along the natural order [of SLA] by understanding input that contains structures at our next stage - structures that are a bit beyond our current level of competence. We move from i, our current level, to i + 1, the next level along the natural order, by understanding input containing i + 1" (Krashen 1985: 2).

Understanding here means that the focus is on the meaning but not on the form of the message.

The input hypothesis attempts to answer the important question of how we acquire second/foreign languages. It is a necessary (but not a sufficient) condition for language acquisition to occur (Krashen 1981b: 100). Its crucial assumption is that we acquire

language only when we understand language that contains structures a little beyond where we are now. The acquisition of new structures comes about through the support of context, knowledge of the world and extralinguistic information. These help us understand language directed at us. Contrary to the commonly held view, the hypothesis maintains that "we acquire by 'going for meaning' first, and as a result, we acquire structure" (Krashen 1982a: 21).

Krashen (1985: vii) further argues that SLA depends first and foremost on the availability of comprehensible input before learner internal processing systems can work, and therefore comprehensible input is "the one essential ingredient" for SLA. The other factors encourage SLA by making the input comprehensible and/or by lowering the filter:

> "We can summarize the five hypotheses with a single claim: people acquire second language only if they obtain comprehensible input and if their affective filters are low enough to allow the input in. When the filter is 'down' and appropriate comprehensible input is presented and comprehended, acquisition is inevitable" (Krashen 1985: 4).

In other words, the input should not only be comprehensible, but also be presented in a situation that encourages a low filter setting (i.e., encouraging positive attitudinal factors). This implies that successful teaching methods are those which provide (1) comprehensible input, presented under conditions that encourage (2) a low or weak affective filter (Krashen 1982a: 32-33).

There are two corollaries of **the input hypothesis.** (a) Speaking is the result of acquisition and not its cause. Speech cannot be taught directly but emerges on its own as a result of building competence via comprehensible input. (b) If input is understood and there is enough of it, the necessary grammar is automatically provided. The language teacher need not attempt deliberately to teach the next structure along the route of the natural order - it will be provided in just the right quantities and automatically reviewed if the student has received a sufficient amount of comprehensible input. That is, input need not be finely-tuned to the i + 1. Providing

sufficient quantity of input is available to the learner, i + 1 is automatically satisfied (Krashen 1985: 2).

Krashen (1981b: 102-107)) specifies the features of what he terms 'optimal input' that help in fostering language acquisition. These include:

1. **Comprehensibility:** we cannot acquire when we do not understand the message encoded in the input. Incomprehensible input is simply noise.
2. **Relevance:** the more the input is interesting and/or relevant, the better the chances for language acquisition to take place.
3. **Non-programmed grammatical sequencing:** given enough input, i + 1 will be supplied without a deliberate attempt to programme it in. Krashen (1981b: 103) predicts that:

> "grammatical sequencing is not only unnecessary, it is undesirable when the goal is acquisition and not learning."

The assumption is that grammatically sequenced syllabi will distort any attempt at real communication.

4. **Sufficient quantity:** although it is rather difficult to say how much input is necessary to reach intermediate and advanced levels of proficiency, nevertheless a sufficient input quantity may be provided by intensive classroom instruction and pleasure reading for content (where rich input is provided).

These four requirements are supplemented by two more additional ones. One focuses on the strength of the affective filter. That is, the way the input is presented should not raise the affective filter or put the student 'on the defensive'. And the other is to do with the desirability of helping students to gain input outside the classroom by providing them with conversational management strategies such as how to converse successfully in informal situations and how to initiate and/or close conversations (Krashen 1981b: 106-107).

Krashen supports the comprehensible input theory of SLA with research findings obtained from studies of simple codes, the silent period, age differences, the effect of instruction, the effect of exposure, lack of access to comprehensible input, immersion and sheltered language teaching, bilingual programmes, the reading hypothesis and the role of output. It is beyond the scope of this work to detail all these supporting arguments - for a complete review, see Krashen 1981a,b, 1985. I have decided, therefore, to look at the evidence taken from simple codes and age differences, both of which are considered studies which provide crucial items of supporting evidence and at Krashen's treatment of the role of learners' output, partly because it is one of the most frequently challenged elements of his theory and partly because it relates to the purpose of the present research.

As we saw earlier in this Chapter, caretaker talk was claimed to help language acquisition because it supplies simplified input. Such input is provided through simple codes which are seen to have relatively different features from standard NS/NS adult speech. For the sake of exposition, it would be useful to restate the features of caretaker talk. First, caretaker talk is a simplified version of standard adult-adult speech in terms of syntactic complexity, choice of vocabulary and certain phonological features. Second, it is roughly-tuned (not finely-tuned) to the child's current level of linguistic complexity. Third, it is used according to the 'here-and-now' principle, i.e., it consists of speech directed to what the child can perceive in the immediate environment, thereby providing an extralinguistic context which helps children comprehend messages directed at them. And finally, it is not deliberately grammatically sequenced or controlled, but rather concerned only with whether the child comprehends the message or not. It follows that caretaker talk is used to communicate meaning rather than to teach language.

Krashen (1985) cites evidence from FLA research which shows that parents, although modifying their speech, do not necessarily provide the child with the exact rule he or she is ready for:

> "The child's 'next rule' need not be covered in every utterance or even in every interchange. Given enough comprehensible input, the necessary grammar is covered in sufficient quantity" (Krashen 1985: 5).

He further generalizes the findings concerning the relationship between input and the child's developing grammar as follows:

> "Children progress by understanding language that is a little beyond them. That is, if a child is at a stage i, that child can progress to stage i + 1 along the 'natural sequence' by understanding language containing i + 1. The child understands language containing structure that is a bit beyond him or her with the aid of context" (Krashen 1981a: 126).

With regard to SLA, the study of simple codes focuses on the question of simplified input, both inside the classroom (teacher talk) and outside the classroom (foreigner talk). Krashen (1981a, 1982a, 1985) cites findings from SLA research (e.g., Trager 1978, Freed 1980) which show that TT and FT share almost all the features of caretaker speech. He therefore concludes:

> "The 'facts' about child language acquisition and caretaker speech seem to hold true for simple codes [teacher talk and foreigner talk] and second languages" (Krashen 1981a: 128).

Moreover, the function of simple codes in the SLA context is like that in the FLA context, to make input comprehensible, thereby encouraging language acquisition. Krashen hypothesizes:

> "Simple codes such as teacher talk...and foreigner talk aid second language acquisition for adults in much the same way that caretaker speech aids child language acquisition" (Krashen 1981a: 132).

It follows:

> "...there is enough suggestive evidence to hypothesize that simple codes are of tremendous help to acquirers at early and intermediate stages, child and adult, first and second languages" (Krashen 1981a: 136).

Krashen (1981a: 120 ff.) suggests that teacher talk may be useful for attaining low-to-intermediate levels of competence, and foreigner talk may provide a bridge to high

intermediate and advanced levels of competence. This implies that access to simple codes enables learners not only to progress but to progress faster in their second/foreign language learning. He concludes that the use of simple codes to facilitate SLA is an ideal proof for the validity of the comprehensible input hypothesis because it provides input which is not only useful, but also essential for language acquisition as well.

Similarly, with regard to age differences, research findings show that while children are generally superior in second-language attainment in the long run, adults, at least initially, acquire data at a faster rate (e.g., Seliger, Krashen and Ladefoged 1975, Oyama 1976, Fathman 1975, Snow and Hoefnagel-Hohle 1978a,b). The explanation for this is that older acquirers progress quicker in early stages because they obtain more comprehensible input while younger learners do better in the long run because of their low affective filter. Adult learners obtain more comprehensible input for various reasons: (a) their previous knowledge of the world helps make the input more comprehensible, (b) they can easily fall back on their first language syntactic rules, realized phonetically with the TL's vocabulary, and (c) they have superior skills in conversational management (Krashen 1985: 12-13).

In spite of these advantages which older learners possess, younger learners do better in ultimate attainment due to the strength of the affective filter. The affective filter is claimed to be strengthened at around puberty. With children, the affective filter rarely goes high enough to prevent native-like second language proficiency, while with adults, it rarely goes down enough to allow native-like second language proficiency. (For a more detailed account of the effect of age differences in support of the input hypothesis, see Krashen 1982b.)

With regard to L2 learners' production, Krashen (1982a, 1985) argues that SLA can theoretically take place without the need to produce acquired/learned L2 knowledge. He claims that the role L2 learner's output plays in SLA is only that it provides a further source of comprehensible input indirectly by inviting more input from speech

partners. Speaking itself is unnecessary for acquiring a second language; and therefore participating in conversations is not necessary for SLA:

> "It is, in fact, theoretically possible to 'acquire' language without even talking" (Krashen 1982a: 60).

The following figure (Figure 2.1) shows how output contributes to SLA in Krashen's framework. It illustrates the *indirect* contribution output can make to language acquisition.

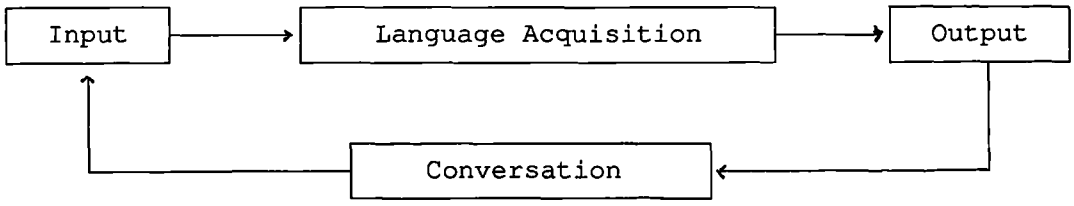


Figure 2.1: The indirect contribution of output to second language acquisition (from Krashen 1982a: 61)

Krashen explains this contribution of L2 learners' output as follows:

> "Comprehensible *input* is responsible for progress in language acquisition. *Output* is possible as a result of acquired competence. When performers *speak*, they encourage *input* (people speak to them). This is *conversation*" (Krashen 1982a: 61).

Although Krashen rejects the idea of comprehensible output, he claims the language learner subconsciously performs operations of hypothesis-testing, nonetheless:

> "This hypothesis-testing, however, according to the Input Hypothesis, takes place on a subconscious level. In addition, it does not require production, nor does it involve communicative success" (Krashen 1985: 36).

Hatch (1983b) suggests that simplified input and simplified interaction, whether in foreigner talk or in teacher talk, have a basic function: they promote communication. In the case of simplified input, adjustments and modifications are tuned in such a way that utterances become easier to comprehend and process. In the case of simplified

interaction, adjustments and modifications promote communication by clarifying what the speaker wishes to say through confirmation checks and other repetition which bring about repetition or expansion of words and utterances.

Ellis (1985a, 1985b) suggests that comprehensible input is not a separate contribution of the NS to the NNS. It is rather an interactionist joint attempt to communicate by both sides. That is, speech addressed to learners is the result of an ongoing interaction between learners and NSs. It is, Ellis concludes, this two-sided nature of the interaction which leads to comprehensible input. Thus, pedagogically, interactional features (e.g., expansions) are more important for SLA than modified input (e.g., average length of T-units).

Long (1983a) and Gass and Varonis (1985b) argue that comprehensible input *per se* is not sufficient for real acquisition. What is needed is the negotiation of input through interaction. It is by virtue of this interactional input, whereby specific interactional, meaning-negotiated conversational turns occur, that SLA results. It is because of their limited opportunity to engage in two-way negotiated exchanges that second/foreign language learners, and even immersion students, are normally somewhat limited in their grammatical development.

Long (1983d) speculates that input may become comprehensible in several ways. One way is by providing learners with structures and vocabulary which they already know and by connecting these to new structures and lexical entries. Another way is by limiting the input to the here-and-now (Krashen 1981a). This helps learners use linguistic, nonlinguistic and previous knowledge to comprehend the new input data. A third way is by modifications of interactional structures of conversations. He concludes that the here-and-now orientation together with the interactional adjustments are the main source of comprehensible input. Figure 2.2 below summarizes Long's model, which accounts for the way in which interactional adjustments in two-way communication promote SLA:

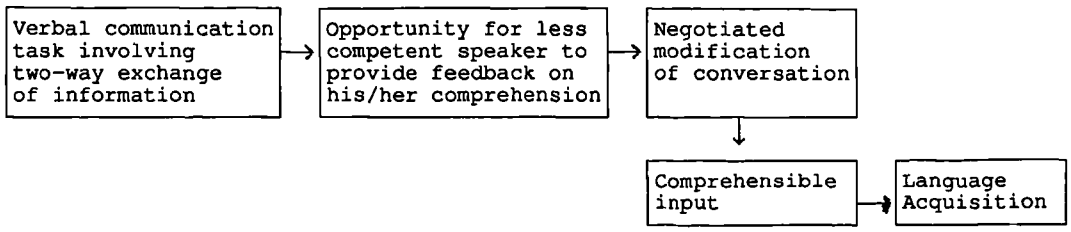


Figure 2.2: Model of the relationship between types of conversational task and language acquisition (from Long 1983d) (quoted in Ellis 1985a: 158)

The comprehensible input hypothesis has been criticized in many ways, including its account of the effects of age differences, the silent period, the role of the output, the role of learner-internal processes and the causative relationship between input, comprehension and SLA. It is beyond the scope of this work to look at all the criticisms and counter-arguments which the comprehensible input hypothesis has attracted. I have chosen, therefore, to look at those criticisms and counter-arguments which relate to the causation argument of SLA, Krashen's treatment of learner-internal processes and his treatment of the role of output, partly because these are the most frequently criticized aspects of his hypothesis and partly because they relate more closely to the purpose of the present study, and in particular the question of the relationship of L2 learners' output and second language acquisition. (For a review of counter-arguments which mainly relate to other aspects of the hypothesis, such as the silent period, age differences, method comparisons, etc., see, for example, Gregg 1984, Chaudron 1985b, McLaughlin 1987 and Shehadeh 1989.)

A number of researchers have doubts about the process-product orientation studies (i.e., the causation approach studies) of SLA advocated mainly by Krashen and Long (van Lier 1988, 1990). In simple terms, van Lier argues that it is possible to show that modified input and interaction promote comprehension of TL utterances, as the process-product orientation studies did (e.g., Long 1983d). However, the main issue is how to specify the 'causal' relationship between modified input and acquisition which Krashen and Long claim. As a matter of fact neither Krashen nor Long has shown how modified

comprehensible input and modified interaction cause SLA. Rather Long (1983d: 378) asserts that the relationship between modified input and interaction and SLA is an indirect one. Van Lier (1990: 39-40) points out that the process-product orientation studies have only assumed that input adjustments might promote SLA via comprehensible input and have failed to show the causative relationship between adjustments and SLA which they have advocated in the first place.

Sharwood Smith's (1986) distinction between input-for-comprehension and input-for-acquisition can be related to van Lier's argument. He argues that the former "involves extracting meaning from all relevant information perceived by the language learner" and the latter "involves the mechanisms responsible for creating (or restructuring) grammatical competence", or new mental structures (p. 239). By the same token, the former involves processing for meaning and the latter involves processing for competence change.

Sharwood Smith argues that successful SLA is more likely to occur when the total input is communicatively complex or diverse (p. 242). Based on these assumptions, Sharwood Smith concludes that specially packaged input for comprehension is one way of identifying the difference between comprehension-facilitating processes and acquisition-facilitating ones:

> "...input that has been specially packaged for optimal comprehension may actually deprive the learner of useful structural information about the target grammar" (Sharwood Smith 1986: 250).

Thus (modified) input and interaction may facilitate comprehension but may not necessarily cause or even promote acquisition.

With regard to learner-internal processes, it has been claimed that the arguments of the comprehensible input hypothesis are too vague and imprecise to provide an adequate account of the process of acquisition in second-language learners (White 1987, McLaughlin 1987). White, in particular, argues that Krashen's claims that SLA is caused by providing learners with input that is slightly beyond their current stage of

knowledge and that will be comprehended through the support of context, extralinguistic information and knowledge of the world do not adequately account for SLA. She argues that there are cases in which "input can also initiate change regardless of context or meaning, depending on system-internal factors, suggesting that comprehensible input cannot be the only impetus to development in a learner's grammar" (White 1987: 97).

For example, White doubts that contextual and non-linguistic factors are the supporting factors for the acquisition of English morphemes by ESL or EFL students. For instance, if the learner has acquired *John speak English*, there is nothing about the meaning or the context which contributes to the learner's realization that English marks third-person singular present and therefore *John speak English* must be *John speaks English.* Similarly, White (pp. 99-100) argues that while it might be the case that in acquiring an English passive structure such as *the book was read by John*, extralinguistic context and knowledge of the world (books do not read) could act as a trigger for change, this, nevertheless, fails to show what kind of change the trigger brings about. Whereas, if we assume that the linguistic form (the short passive form of an obligatorily transitive verb) acted as the trigger for change, it is possible to suggest precisely what kind of change the trigger brings about (transitive verbs require themes, so a passive analysis is forced).

White also maintains that the frequent use of simple codes in the input of NSs to NNSs is largely determined by the learner who changes (in the material he/she attends to and exploits), rather than the NS (in how he/she speaks). This implies that intake (those parts of the input absorbed by the learner) is defined by the learner himself/herself, and that it is not possible for the language teacher or the NS to provide the exact quantity of intake required, although the input they provide may contain the required intake (p. 102). She further argues that in certain contexts there are cases where the rules of language can be explicitly explained and taught if the learners cannot otherwise deduce them from the input (such as 'adverbs in English cannot go between verb and object'). Explicit instruction in such cases may be useful input to L2 acquisition which may act as a "potential trigger to grammar change in the learner's system" (p. 107).

Based on these arguments, White contends that there must be something in the input which motivates 'grammar change' in the learner. In other words, there must be some kind of interaction between the input data (or certain aspects of it) and the learner's existing knowledge. It is those aspects of the input which act as 'triggers' for grammar change. She states:

> "...these triggers can be of various types, some cognitive, some maturational, some semantic, some purely linguistic... The idea is that something in the acquisition situation forces change in an existing *i* because it is insufficient to handle certain aspects of the input data and that the triggers interact with something, either UG [Universal Grammar] or the previous grammar or both" (White 1987: 99).

White suggests that in order for the comprehensible input hypothesis to be adequate, it needs "a theory of what precise aspect of the input interact with what aspect(s) of the learner's existing system" (p. 100). This theory enables one to make specific and testable hypotheses as to what aspects of the input motivate change, and what kind of change might be expected.

It must be emphasized, however, that White's counter-arguments should not be accepted as undisputed. Of course, White is justified in her arguments that Krashen does not show precisely how the input data interact with context and extralinguistic information in order to make i + 1 input comprehensible to the learner. She is also justified in that Krashen does not show what i and i + 1 consist of or how learner-internal systems select the right input. Nevertheless, White's argument that Krashen's comprehensible input hypothesis emphasizes external over learner-internal factors seems to be overemphasized.

Indeed, many of Krashen's arguments for comprehensible input are motivated by learner-internal systems. So, for example, when Krashen argues that the use of simple codes in NSs' input to NNSs provides comprehensible input which encourages SLA is a clear indication that the input, in order to be comprehensible, must be accepted by the learner. In other words, the kind of input which NNSs receive from their NS

interlocutors is largely determined by the NNSs' demonstrated level of competence in the TL. And therefore, simplified input and simplified interaction, although a prerequisite to comprehension, are not determined by external factors (such as interlocutors), but rather the extent of their simplification is largely determined by what the NNS can comprehend, which is, in turn, determined by what learner-internal processes can accept at that point of competence. Indeed, Krashen's formulation of i + 1 (the next stage of the natural order) implies that we must first know i (the current level) because it is our knowledge of the learners's current level of competence in the TL that determines the kind of simplified input and interaction which we are likely to supply him/her with. In short, although Krashen does not explicitly discuss or specify the role of learner-internal processes, his arguments must be taken to have been motivated by what constitutes comprehensible input to what the language learner's processing abilities can accept in the first place. (For a similar argument, see Saleemi 1989: 180-183.)

Finally, with regard to Krashen's treatment of L2 learners' output, it has been pointed out (Wong-Fillmore 1982, Swain 1985 and McLaughlin 1987) that understanding of new forms is not enough: learners must be given the opportunity to produce them. This is because unless learners try out the language they have acquired/learned, they are very unlikely to get the kind of feedback they need in order to analyze the structure of the language. If such feedback is missing, interlocutors will fail to make the necessary adjustments described earlier, and so learning will be severely hindered. Furthermore, several SLA researchers (e.g., Hatch, et al. 1986, Schachter 1984, 1986, Sato 1986, Brock et al. 1986, Pica 1988) have drawn attention to the significance of the modifications which NNSs make to their IL when NSs signal difficulty in understanding. These researchers argue that when NSs indicate difficulty in understanding NNSs, the latter respond by modifying their IL utterances in the direction of comprehensible output and, in so doing, achieve more native-like production.

Swain (1985), in particular, doubts that interactions and comprehensible input on their own lead to SLA. She claims, instead, that comprehensible output is necessary for SLA

on the assumptions that (a) one learns to speak by speaking, one learns to read by reading, and one learns to write by writing (Hatch 1978b, Smith 1978, 1982), (b) learners must be 'pushed' in their output if they are to analyze further the grammar of the TL (which, in turn, forces them to use alternative means if communication breakdown occurs), (c) it gives the learner an opportunity to try out his/her hypotheses about the TL to see if they work, and (d) it forces the learner to move from semantic processing to the syntactic processing (Swain 1985: 248-250).

Swain claims that this explains why immersion students (the subjects of her study) did not demonstrate native-like productive ability: this was not because their comprehensible input was limited (which it was not), but because their comprehensible output was. It was limited in two ways: they were not given the opportunity to use the TL in the classroom, nor were they pushed in their output. Swain, therefore, argues that conversational exchanges, although a prerequisite to acquisition, are not themselves the source of acquisition derived from comprehensible input. Rather they are the source of the acquisition derived from comprehensible output. Given these arguments, Swain proposes a concept parallel to that of comprehensible input. This she calls "the comprehensible output hypothesis" (Swain 1985: 249) and argues that it is also a necessary mechanism of acquisition whose role in SLA is in many ways independent of the role of comprehensible input (see also Ch 4).

In conclusion, the provision of comprehensible input certainly is an important factor in SLA. But it is doubtful whether it is the only causative factor as Krashen claims. Furthermore, the input hypothesis seems to emphasize the role of external factors. Krashen does not, for example, explicitly discuss the role of learner-internal processes in SLA and development. Also the hypothesis seems to favour the role of comprehension (understanding) while deemphasizing at the same time the importance of production (output). McLaughlin (1987: 51) suggests that "a more balanced view of the second language learning process [which] gives equal weight to internal and external factors and to production and comprehension" is needed.

2.2.2.2 On the rate and success of SLA

It has been predicted that linguistic environments are important determinants of the speed at which L2 learners progress and of their final competence in the second/foreign language learning (e.g., Seliger 1977, 1983, Oller 1980, Snow and Hoefnagel-Hohle 1982, Day 1985, Wong-Fillmore 1985).

Snow and Hoefnagel-Hohle (1982), for instance, examined the input and the interaction of thirteen NNS learners ranging between 3-18 years old with native Dutch teachers and classmates in a Dutch public school. Results showed that teachers simplified their speech for NNSs. Classmates also used shorter MLUs to NNSs, except in the case of older subjects. There was also a tendency among teachers to use more utterances when addressing older learners than younger ones, i.e., they pitched their speech at a level determined by the age of the addressee.

Snow and Hoefnagel-Hohle suggest that such input is very much related to learning via two channels: (a) learning utterances which provide crucial information, and (b) learning utterances which are specifically directed at students.

They comment that it is rather difficult to establish with certainty a relationship between aspects of the input and subsequent improvements in second language ability. It was thus suggested that the quantity of comprehensible input did not determine the rate of SLA. This may be due to (a) the wrong relationship being examined, (b) the relationship differing from one age to another, or (c) the wrong measures being used. Snow and Hoefnagel-Hohle are careful to say this because they recognize that there is good evidence that the frequency of various structures in the input language may be of importance in determining final achievement (Seliger 1977) and the order of acquisition of those structures by second language learners (Larsen-Freeman 1976a, Wagner-Gough and Hatch 1975). For instance, Seliger has found a significant correlation between the quantity of interaction and achievement scores in the SLA.

Day (1985) studied the role of exposure to the TL in context (outside the classroom) in determining the proficiency of second language acquirers. His subjects were 58 NNS adults whose residence in the community of the TL (English) in Hawaii at the time of the study varied considerably (2 weeks to 5 years). The study was conducted through what Day termed the Language Contact Profile (LCP), a self-report questionnaire, and through measures of English proficiency.

The findings of the study did not support the claim that it is easier to learn a second or foreign language when the learner uses the TL in context. Subjects' self-reports did not predict their level of English proficiency. That is, their use of English outside the classroom - as reported by the students themselves - was not significantly related to their proficiency in English.

Day, however, recognizes the limitations of his study in that it was administered to measure the quantitative use of the TL. It did not assess the qualitative aspects of the use of English in the natural settings he investigated. Measurement of proficiency must examine both the quantity and the quality of exposure to the TL in natural settings if it is to confirm the role exposure to TL plays in increasing the proficiency level of learners.

Contrary to Day's findings, Bialystok (1978), Seliger (1977) and Monshi-Tousi et al. (1980) provided evidence in support of the hypothesis that students' level of proficiency in the TL is very much associated with their use of that language in natural contexts.

Wong-Fillmore (1985), in a comprehensive 3 year longitudinal study in a kindergarten school, studied four classes of ESL. Pupils were described as limited in English proficiency (LEP). English was the means of instruction. Teachers were almost the only source of English input. Wong-Fillmore found that two of the classes were successful (in the sense that they promoted SLA) while the other two were less successful (in that they failed to do so).

Wong-Fillmore examined several variables in an attempt to account for the causes of these differences (see Wong-Fillmore 1985 for more details). She found that the causative factors for success or failure could "be attributed in part to the way these classes were organized for instruction and in part to the way teachers presented the materials they were teaching during lessons" (p. 21). In other words, there was an interactive effect involving the composition of the classes and the type of organization. She explains the results of her study in terms of the type of input and interaction present in the different classrooms.

The first organizational structure of successful classes was that the activities in these classes were, contrary to the commonly held view, teacher-centred rather than student-centred. Second, lessons had clear separation of boundaries: this includes linguistic and non-linguistic features of lesson boundaries, such as lesson frames, events, and what to expect linguistically and instructionally. Such consistency in organization helps students know what to expect and what to do procedurally. Third, clear lesson formats, i.e., structural regularity and consistency in presentation, which suggests that predictability plays a major role in comprehension. By putting the present lesson in the context of previous ones, teachers anchored the new language in a familiar context. And finally, frequent and systematic turn-allocation in lessons, such as systematic choral recital, group work, individual work and bids for turns were fully satisfied and consistent.

On the other hand, Wong-Fillmore described teachers' talk that worked as input as follows. (a) In bilingual immersion classes, the two languages were kept separate. (b) Emphasis was on communication and comprehension. In these classes English (the TL) was used to communicate subject-matter to students. This had a twofold benefit: it helped students develop academic and second language skills simultaneously. (c) The language used was well-formed and appropriate to the specific registers of the subject-matters. (d) Repeated use of patterns and routines helped learners detect structural regularities in the language used, which is a first major step in learning a second language. (e) Teachers used more repetitions, modifications and paraphrasing. (f) Teachers also tailored their input to fit the levels of proficiency of individual students,

repeating the one-word utterances or short responses given by students, and expanding them into full sentences by way of confirming students' utterances. Such expansions help students see and hear what their short responses look like in their full forms. Further, by tailoring input to meet individual learner capacities, teachers lessen the anxiety which learners are likely to feel when more is expected of them than they can give or handle. Wong-Fillmore concludes that both the quantity and the quality of input and interaction are important for SLA in terms of its rate and final attainment.

Overall, there are relatively few empirical studies which have investigated the effect of input and interaction on the rate and success of SLA. The available evidence shows that although there is mixed evidence as to the effect of input and interaction on the rate and success of SLA, the general tendency of findings amounts to the claim that both quantity and quality of input promote SLA. However, we are not told what the aspects of input and interaction which mostly promote or hinder the rate or ultimate achievement in the SLA are.

2.2.2.3 Summary and conclusion

In this section, I have looked at the role input and interaction play in SLA. Studies investigating the role these play in SLA are in fact investigating how input qualifies as intake, thereby promoting or assisting language learning. Several methods have been followed to account for the role of input and interaction on the route of SLA. These include analyzing formulaic speech, looking at vertical structures, and looking at comprehensible input.

The comprehensible input hypothesis is probably the most 'detailed' hypothesis currently available which has attempted to account for the role input and interaction play in SLA. According to the comprehensible input hypothesis, in order for input to qualify as intake, it must first of all be comprehensible to the learner and must be a little beyond his/her current ability or competence. Acquisition of input data is aided in several ways: by connecting new knowledge to previous knowledge; with the help

of context (linguistic and non-linguistic knowledge); by tailoring input to suit learner's linguistic proficiency; and by simplifying input and interactions. It has been claimed that these factors promote SLA both in naturalistic and in instructional settings. Accounts of the comprehensible input explanation have been challenged in several ways, especially in relation to the causative argument, its account for learner-internal processes and its treatment of the role of L2 learners' output or production.

The studies which have attempted to account for the role of input and interaction on the rate of and final achievement in SLA have come up with various conclusions. Some studies have found that the quantity of input and interaction did not determine the rate of SLA. Others have found that exposure to the TL in context did not increase the possibility of higher achievement in the TL. Conversely, there are other studies which have found that input and interaction in context have increased the level of final achievement. Another class of studies has found that both the quality and the quantity of input and interaction aided the rate of and ultimate success in SLA.

There are researchers who have the doubts about the conclusions reached by the different studies and theoretical positions about the role of input and interaction on NNSs' comprehension (e.g., Hawkins 1985, Aston 1986). Hawkins (1985), in particular, argues that attempting to find out how comprehension comes about presupposes establishing exactly what is being comprehended by the learners in the first place. Contrary to the commonly held view, she doubts that NNSs' signal of an appropriate response is always a valid indication of real comprehension.

Hawkins examined discourse and interaction between NSs and NNSs to test if the responses supplied by the NNSs were in fact appropriate in that they actually signaled comprehension. Her subjects were four adults: two NSs of English and two NSs of Spanish. The native Spanish speakers were the ESL learners. The four subjects were paired in two: NS/NNS in each pair. She found that out of the 11 appropriate responses supplied by the NNSs, only two responses signalled comprehension. There were 9 appropriate responses which did not signal comprehension at all. In other words, the

appropriate responses which signalled true comprehension constituted only 15% of the total 'appropriate responses' (p. 175).

Hawkins therefore argues that describing the modifications by NSs is one thing; it is quite another to say with confidence exactly how they affect the SLA process for the learner. She concludes that the "the criterion of 'appropriate response' as a measure of NNS comprehension...is not completely reliable" (p. 176). Without dismissing the importance of making the input comprehensible to the learner, Hawkins points out that the determination of comprehension is more problematic aspect of SLA which needs to be investigated more carefully:

> "We cannot make strong claims bout *how* FT aids learners in their comprehension if we do not know *what* they comprehend. To do so would run the risk of building our ideas of how FT aids the SLA process based on a faulty decision about what is comprehended" (Hawkins 1985: 176). (Italics in the original)

Indeed, as Saleemi (1989: 188) has suggested, it is rather difficult to specify with confidence what is comprehended also because "several types of input may work for different individuals in different situations".

Moreover, it would be wrong to assume that features of input and interaction on their own are the only factors responsible for SLA. These might facilitate it, but the main determinant factors which set the parameters for what portions of input data are accepted and what are not are learner internal processing systems. The importance of learner internal mechanisms has been referred to in the literature by several scholars (e.g., Hatch 1983a, McLaughlin 1987, White 1987). For instance, Hatch writes:

> "While social interaction may give the learner the 'best' data to work with, the brain in turn must work out a fitting and relevant model of the input" (1983a: 180).

Nevertheless, these have been largely overlooked, possibly because of the difficulty which researchers face when investigating these mechanisms and their roles in the SLA process and development.

2.3 Conclusion

In this Chapter, I have considered different empirical findings, explanations, conclusions and generalizations relating to input and interaction in SLA to show to what extent they might give theoretical and pedagogical insights into SLA research and second/foreign language learning. To do so, it was necessary to consider relevant findings in the context of FLA. Indeed, it is evident that similarities between input data and interaction data in both contexts do exist. They exist in terms of the quantity and quality of input and interaction child first language acquirers and second language learners receive from their interlocutors.

Specifically, it has been argued that simplified input and simplified interaction in both contexts are in many ways different from standard adult NS/NS interaction. That is, both child first language acquirer, and language learners receive input that is tailored (roughly-tuned) to their demonstrated level of linguistic competence, tied to their immediate concerns or environments, and simplified in terms of syntactic complexity, choice of vocabulary and phonological features. Moreover, it has also been argued that these features of input and interaction serve almost the same role in both contexts - to facilitate language acquisition. Pedagogically speaking, the findings in FLA and SLA research call for directing language teaching towards more naturalistic and communicative ways of language acquisition.

Studies of input and interaction in SLA include research describing the nature of input and interaction, and their influence on each other, on the one hand, and on SLA, on the other. Such studies have also investigated the role comprehension ability plays in determining the quantity and quality of input and interaction that might be accepted by learner-internal processing systems (comprehension ability). There are a considerable number of studies which describe and analyze the nature of NSs' input to and interaction with NNSs. It has been argued that (simplified) input and (simplified) interaction positively affect both the route and the rate/success of SLA.

There are several crucial areas not yet fully studied. In particular, interlanguage talk has not yet been studied as a source of input and interaction. And so it is not clear whether interlanguage talk is helpful or harmful. More research is needed on interlanguage talk to show whether peer-group and in-class activities affect SLA. If they do, it must be shown in what way, to what extent and what aspects of SLA are affected. Also, one wants to know the extent to which learner-internal systems determine the quantity and the quality of input and intake. Moreover, as Sharwood Smith (1986) has pointed out, most of input and interaction studies have failed to distinguish between comprehension-facilitating input and acquisition-facilitating input. Similarly, Hawkins (1985) suggests that it is important to be able to account for what is comprehended first before we can make claims about how simplified input and interaction aid SLA. Future research must examine these areas more closely.

Chapter Three

Output, Repair and Second Language Communication Strategies

The vast bulk of research into SLA has investigated output (production) in so far as learner utterances have provided the data for study (Ellis, personal communication). Research on non-native speakers' performance and SLA concentrated on four main areas: (i) the correlation between input data and output data (or the effect of frequency), (ii) repair mechanisms, (iii) the various communication strategies which NNSs follow when they communicate in the TL and (iv) the significance of NNSs' production and its role in the development of their second language ability. This Chapter will review research findings and the various theoretical positions which relate to the first three areas and Chapter four will consider the studies and explanations which have specifically addressed the issue of the significance of NNSs' production and SLA.

3.1 Input-output Relationship and SLA

Studies which have investigated the relationship between input data and output data have done so by matching the frequency with which the former is presented and the frequency with which the latter appears in L2 learners' interlanguage (Ellis 1990, Ch 5).

Several studies have found that children acquiring their mother tongue follow a predictable path (Brown 1973, de Villiers and de Villiers 1973). More importantly, several other studies on child (Dulay and Burt 1973, 1974) and adult (Bailey, Madden and Krashen 1974, Perkins and Larsen-Freeman 1975) second language learners have also observed that L2 learners follow a more or less predictable route of L2 learning similar to that observed in FLA contexts. Such studies have shown that SLA follows

the same route of acquisition irrespective of the MT, instructional differences, context differences (formal/natural), learner strategies and age differences. It was also demonstrated that L2 learners' output exhibits a high level of systematicity (Tarone 1983, 1988, Ellis 1985a). It was speculated, hence, that this systematicity is likely to be due to the frequency of the input supplied to language learners and to the perceptual saliency of certain grammatical morphemes, all of which may reflect (correlate with) the natural order for SLA (Larsen-Freeman 1975, 1976b, Long 1981, Wagner-Gough and Hatch 1975, Hakuta 1974, Perkins and Larsen-Freeman 1975, Hatch 1974, 1978b,c, 1983b).

A major way of looking at SLA data in the 70s and early 80s was, therefore, to look at the frequency of certain morphemes because the frequency of occurrence could be correlated with the natural order for learning which might in turn represent some innate second language learning ability. In other words, rather than see frequency as the key, it was observed as a means to some further explanation, such as the Natural Order Hypothesis (NOH) for language learning. Hence, several SLA researchers investigated the frequency order of certain grammatical morphemes and linguistic structures as supplied to L2 learners and correlated these with the frequency order of the same grammatical morphemes and linguistic structures as they appeared in the L2 learners' production (Huang 1970, Wagner-Gough 1975, Boyd 1975, Larsen-Freeman 1975, 1976a, Hamayan 1978, Plann 1979, Lightbown 1980, Long 1980, 1981, Hamayan and Tucker 1980, Long and Sato 1983, and Lightbown 1983).

For example, Long (1980) had 48 adult NSs and 16 adult NNSs from a variety of MT backgrounds (Arabic, Cantonese, Farsi, French, Japanese, Mandarin, Portuguese, Russian and Spanish). Subjects were assigned randomly to form 32 dyads: 16 NS/NS and 16 NS/NNS. Each dyad performed the following six tasks in the same order: (1) informal conversation, (2) vicarious narrative (i.e., the description of a movie, told by the matched NS in the dyads in each condition), (3) giving instructions for two communication games, (4) playing the first game (odd man out), (5) playing the second game (spot the difference), and (6) discussing the supposed purpose of the research.

Conversations were tape-recorded. About 25 minutes of conversations from each dyad were transcribed for analysis.

One purpose of the study was to see if there was a relationship "between any differences in the relative frequencies of forms in the linguistic input to NSs and NNSs and the order in which forms appear accurately supplied in obligatory contexts in the speech of second language acquirers" (Long 1980: 64). The forms investigated in this study are the following nine grammatical morphemes proposed by Krashen's (1977) "average order", listed here according to their appearance in the NNSs' "average order" output: progressive -ing, plural, copula, auxiliary, article, irregular past, regular past, 3rd person singular, and possessive. The results of the study showed that there was a statistically significant relationship between the rank order of the relative frequencies of the nine grammatical morphemes in the linguistic input to NNSs and the "average order" of appearance of the same morphemes accurately supplied in the linguistic product of L2 acquirers.

In another study, Hamayan and Tucker (1980) examined the relationship between selected characteristics of formal language teaching input and second language achievement. The speech of three teachers from two immersion (IMM) schools and three teachers from two French (NS) schools in Montreal, Canada of grades three and five was recorded. The following nine structures were selected as the focus of the study: indirect question, subjunctive, contraction, preposition contraction, adjective gender agreement, subject-verb number agreement, auxiliary *etre*, participle, and reflexive. The purpose of the study was to examine the characteristics of the language which teachers used in their general communication with their students and the extent to which this language affects or determines the students' performance; that is to say, to see if there is any correlation between the frequency of occurrence of certain linguistic structures in the teachers' speech and the extent to which the same structures were produced correctly by the students.

The results clearly indicated that there was a significant relationship between the frequency of occurrence in teachers' speech and correct production for immersion children as well as NS children. Hence, it was hypothesized that there is a positive significant correlation between the frequency of occurrence of the nine grammatical structures examined and the extent to which the same structures were produced correctly by the students.

This is not always the case. There are other studies which have not found such positive correlations between the input to L2 learners and their production (Rosansky 1977, Lightbown 1983, Long and Sato 1983). For example, Lightbown (1983), in a longitudinal study investigated relationships between the language L2 learners hear and the language they produce. Like most other studies in the area, her study investigated a group of grammatical morphemes. The subjects of this study were monolingual French Canadian adolescents (one MT) who had little contact with English outside the classroom in which they were taught ESL for a few hours a week (1 hour and 20 mins in grades 4, 5, and 6; 3 hours and 20 mins in grade 7). The subjects ranged in age from 11 to 14 years. In the first year of the study, the students were in grade 6, in the second year, they were in grade 7. All students had begun studying English in grade 4 or grade 5. Up to grade 6 (the time of the commencement of the study), the 36 subjects of the study were in the same school with the same teacher. In fact they had the same teacher and the same materials throughout their ESL instruction. In grade 7 (the first year of secondary school in Quebec), the students changed school, teacher and textbook.

The morphemes investigated were the various functions of '-s' morphemes (copula, aux. in prog. construction, 3rd person singular, plural and possessive) and the progressive marker '-ing'. These morphemes were specifically investigated because they seem to be "a source of confusion and error for all groups of learners from grade 6 to grade 11" (Lightbown 1983: 220).

The results of the study did not find any direct relationship between the frequency with which certain forms appeared in the classroom and the frequency or the accuracy of these forms in the learners' language at the same point of time. However, there was some evidence that frequency had a "delayed effect" (p. 239). This delayed effect might explain why the students most frequent and accurate use of '-ing' was in grade 7 but not in grade 6. The grade 6 students had practised '-ing', copula and aux. '-s' to the point of overlearning. Even though '-ing' was relatively infrequent in grade 6 classroom language, the students' overlearning of the form may have caused it to remain in their speech throughout that year.

The results of the study, Lightbown argued, cannot be taken to support the "natural sequence" hypothesis (Krashen 1977, Dulay and Burt 1974) for the acquisition of grammatical morphemes, nor could they be taken to disconfirm it (Lightbown 1983: 240).

Overall, there is preliminary evidence that the relative frequency of certain linguistic items in input data is related to the order in which these items appear in the second language learner's speech, and that the relative frequency of occurrence of these items in the input may be the crucial factor in determining the order of acquisition of these structures by second/foreign language learners (Larsen-Freeman 1976a,b, Long 1980). It has been suggested, therefore, that perceptual saliency (the prominence or saliency of certain grammatical morphemes of the TL which are hypothesized to be easily noticed by non-native learners of that language), semantic complexity, and first language influence may play some role, but *frequency of occurrence* is the only factor to have been significantly correlated with acquisition orders and adhered to by learners of English as a second/foreign language (Larsen-Freeman 1979: 87-88).

None of these studies has looked at the correlations in terms of the acquisition of wider perspectives of language in real communication, namely the pragmatic and discourse aspects of language. Any study (whether longitudinal or cross-sectional, dealing with

adults or children) is bound to be inadequate if it does not account for the real use of language in everyday communication. For example, none of these studies has told us anything about the correlations between the pragmatic function of messages as intended by NSs and their illocutionary and perlocutionary effects or pragmatic correlations when used by NNSs.

More importantly, however, the relationship between input and output frequencies is an uncertain one because it is difficult to trace out the links between input and output. Indeed, Larsen-Freeman, one of the prime movers of the frequency explanation, acknowledges that "it is very difficult to make causal statements or to say that the latter is the result of the former" (personal communication). Moreover, such relationship may simply reflect the fact that some structures occur more frequently than others. Rosansky (1977) points out:

> "One explanation for the frequency order parallels may be not that external frequencies per se have influenced... acquisition, but simply that in order to speak English certain morphemes will of necessity have to be produced more frequently than others" (Rosansky 1977: 326).

And therefore, the similarity between the two types of frequency may be coincidental. This latest remark gains support from the fact that if output frequency reflects that of input, there would be no (or very few) deviant utterances in the language learner's output. Clearly this is not the case. Ellis (1985a: 157) speculates that it is possible that learners copy the ungrammaticality of the foreigner talk they receive.

All of these views and accounts overlook several crucial observations and factors. Even Ellis's explanation should not be overemphasized and generalized to include all learning contexts: learner's normal input, particularly in the initial stages of SLA in formal settings, is teacher talk which is in turn, as we saw earlier, typically well-formed. L2 learners also receive input from their peer group (interlanguage talk (IT)) whose influence on SLA has not yet been fully investigated. If these three-input types (foreigner talk, teacher talk and interlanguage talk) are classified in terms of their influence on SLA, TT would be expected to be the most influential one in terms of

quantity and quality of input, if not of interaction. Furthermore, apart from FT, which has been found to be partially non-standard in terms of only certain grammatical aspects, almost all other input channels (e.g., T.V., radio, books, journals, TT and possibly IT) provide well-formed TL utterances. Hence, the suggestion that output data are deviant due to the deviant FT that language learners receive is inadequate. This argument for ungrammatical input might also be rejected on the ground that children acquiring their MT receive a distorted ungrammatical and non-standard version of their MT in the early stages of acquisition. Nevertheless, they develop native intuitions and achieve a complete mastery of their MT.

Furthermore, studies on variability and systematicity of interlanguage tell us that L2 learners make similar errors irrespective of all other variables such as learner differences, cultural differences, first language differences, and linguistic environment differences (e.g., Perkins and Larsen-Freeman 1975, Felix 1981, Pica 1983, Ellis 1982, 1985a,b, Pienemann 1985). This means that there is consistent evidence to suggest that language learners' performance abilities are similar regardless of other variables (including the nature of the input to a considerable extent). It follows, then, that if learners' production shows a high level of concordance despite input factors, this cannot be taken as a reflection of the frequency with which input was presented, since different instructional methods provide different input frequencies.

This notion of systematicity in interlanguage leads us to a second point that is often overlooked, namely, the role of learner internal systems. These undoubtedly play a major part in determining the nature of output irrespective of whatever goes in. Studies on frequency seem to ignore the role of learner internal processing systems (McLaughlin 1987). In fact the learner has been portrayed as a passive participant in the language teaching operation with more emphasis being laid on the frequency associations than on the learner himself/herself.

To illustrate this point, the findings of FLA studies may be relevant here. In FLA, it has been observed that there are utterances in the children's output which are not part

of the input data they receive, and at the same time such output data is not originally part of the adult code (Ervin 1964, Karmiloff-Smith 1984). For example, Ervin, reports how children, having apparently mastered English irregular morphology (came, went, etc.), proceed to replace these forms with regularized, and thus deviant, past tense forms (comed, goed, etc.). These forms are themselves replaced by the forms which were already evident in the children's utterances in the first place. Karmiloff-Smith, who provides a similar example from children acquiring French as their MT, hypothesizes that "children...ignore or violate external reality in pursuit of the organizing whole" (quoted in Kellerman 1985: 352). The assumption is that the child sets about to reorganize his or her mental representations of the structures he/she receives in the input into a system which may not necessarily operate according to the input data. And therefore, there must be certain other internal mechanisms which largely determine performance ability.

Similarly, Shehadeh (1990) cites research findings which confirm that the same or comparable systems operate in second/foreign language learners and that these largely determine the nature of performance ability in addition to the input data. Indeed there are studies which have observed elements in L2 learners' production which are not part of the input they received (Huebner 1983, Kellerman 1985, Zobl 1985). For example, Kellerman (1985: 347) cites findings by Huebner (1983) who studied the acquisition of the definite article 'the' by a Hmong learner of English. Huebner found that his informant used /da/ (the) ungrammatically more frequently halfway through the study than in the initial stages. Zobl (1985) also shows that in acquiring knowledge of certain aspects of the TL which are present in the input data, the learner also comes to have knowledge about other aspects of the TL which were not present in the input data set (p. 330). Based on findings by other researchers and his own, Kellerman concludes that there are certain aspects in the output of L2 learners which "cannot be related to the specific form of the input learners receive, since the systems the learners appear to develop are not present in the input" (Kellerman 1985: 352).

Clearly, the studies reported earlier, with their concentration almost exclusively on frequency and to a lesser extent on perceptual saliency, have bypassed the role of the learner as an **active contributor** in the operation of SLA.

Furthermore, as mentioned at the beginning of this section, the goal of the frequency argument is to show that frequency correlates positively with the NOH for L2 learning. However, although the frequency of occurrence of certain grammatical morphemes was seen to correlate with the NOH for L2 learning, the NOH in itself does not have explanatory power (Shehadeh 1990). It is only a descriptive observation. Indeed reanalysis of the data obtained from these studies might yield alternative explanations. Such reanalyses would be possible within the framework of Markedness Theory which states that there are aspects of the grammar of language which are more 'neutral' (or unmarked) and therefore more accessible, whereas there are other aspects which are less neutral (or marked) and therefore less accessible. Cook describes markedness as follows:

> "**'Markedness'** means departure from the usual 'neutral' form in one way or another; the black sheep is marked, the white sheep unmarked because sheep are expected to be white; the albino crow is marked because crows are expected to be black" (Cook 1988: 53). (bold is in the original)

In relation to the grammar of language, the assumption is that some aspects of grammar are totally derived from Universal Grammar (UG), some less derived and some quite unrelated (Chomsky 1976, Cooks 1988). (Universal Grammar is defined by Chomsky (1976: 29) as "the system of principles, conditions and rules that are elements or properties of all human languages... the essence of human language.") UG is concerned with unmarked (or core) grammar rather than with marked (the peripheral) aspects of grammar. Therefore, the more a certain grammatical or language aspect departs from UG the more it is marked; whereas the central core is unmarked, which constitutes the expected form of human language (Cook 1988: 53). By the same token, the less marked forms are considered to be more accessible for acquisition or learning, whereas the more marked ones are considered to be less accessible.

In relation to SLA, Bley-Vroman, Felix and Ioup (1988) investigated the accessibility of UG in adult L2 learners. They found that learners tend to guess the right answer much more often than chance. The experimenters got their informants to make decisions on the basis of how they *felt* the sentences sounded. The judgments they obtained from their informants were accurate twice as often as chance would have predicted. This led the researchers to conclude that nonnative "adults appear to have some sort of access to knowledge of UG, and this knowledge is used in the development of foreign language competence" (Bley-Vroman et al. 1988: 26-27).

Some of the frequency studies mentioned above (Huang 1970, Lightbown 1980) and elsewhere (e.g., Vander-Brook, Schlue and Campbell 1980) have observed that L2 learners acquire non-inverted yes/no, subject-verb, and WH-questions before inverted ones. Based on Chomsky's (1981: 8-9) assumption that the SVO order is an aspect of the core grammar (and therefore it is more accessible than VSO order) and on Bley-Vroman et al.'s (1988) findings, the most likely explanation is that L2 learners learn non-inverted questions before inverted ones not because they are merely more frequent as these studies have suggested but rather because the subject-verb-object (SVO) order is less marked than the verb-subject-object (VSO) order, and hence these are more accessible.

For example, an L2 learner who says *which he read it* (i.e., with the resumptive pronoun IT at the end of the utterance) is preserving the unmarked SVO order unchanged, rather than using the most frequent structure. Although the required order for *which he read* is OSV, the learner tries to preserve the standard unmarked SVO ordering; that is why he/she adds the resumptive pronoun to the end of the utterance. One could also argue that such structures are more frequent because they are less marked and therefore more accessible. As such, the reason why L2 learners produce this structure (SVO) more often than native speakers is not because it is more frequent (which is obviously so), but because it is unmarked.

In short, studies of the input-output relationship fail to account for performance ability in terms of its relation to input data. It is rather difficult to treat the relation between input and output in the obvious one-to-one way that these studies suppose. In other words, input data are not as neatly reproduced in output data as has been claimed and there is evidence that there are other determining factors which affect both the quantity and the quality of output data. This is not surprising because the role of learner internal systems have been largely ignored. These could be the factors determining performance ability.

It could be argued, therefore, that the observation of the data in the 70s and early 80s is accurate but lacking in explanatory power. Each study was controlled by the framework which it set for itself, i.e., to observe a particular type of correlation. By the same token, the extent to which such studies exhausted the data obtained was not adequate because a reanalysis of the data (or a study of the data excluded) shows that it is the innateness mechanisms that are at work rather than the frequency with which input data were supplied. That is to say, learner internal processing systems (mechanisms) are the crucial factors which ultimately determine the nature of L2 learner's output irrespective of the MT, age differences, environmental differences, or instructional differences, including the frequency order of the input.

In short, the argument of the frequency order was seen to provide support for the natural order hypothesis for SLA, which in fact it largely did, despite one or two pieces of counter-evidence. Nevertheless, the NOH itself was limited to the descriptive and observational dimensions of L2 learning. In regard to these arguments and in particular those which relate to investigating the pragmatic and discourse aspects of language, and Markedness Theory, future research in the area must investigate the extent to which external factors (such as the first language, age difference, linguistic environments and particularly instructional differences) and learner internal factors interact to determine L2 learner's performance ability in the TL.

In this section, NNSs' output and its relationship to input data were discussed. The second area into studying NNSs' performance relates to repair mechanisms and communication breakdowns. It examines the various types of repair-initiation and repair-completion as well as the processes underlying the initiation and the completion of repair.

3.2 Repair Mechanisms

3.2.1 Types of repair

In NS/NS interactions, Schegloff et al. (1977) identify four types of repair: Self-repair issuing from self-initiation, self-repair issuing from other-initiation, other-repair issuing from other-initiation and other-repair issuing from self-initiation (1977: 364-5). Schegloff et al. provide evidence which shows that in conversations self-initiated self-completed repairs are typically preferred to other types of repairs. Also other-initiated self-completed repairs are preferred to other completed-repairs. They conclude

> "...the organization of repair in conversation provides centrally for self-correction, which can be arrived at by the alternative routes of self-initiation and other-initiation - routes which are themselves so organized as to favour self-initiated self-repair" (Schegloff et al. 1977: 377).

They also argue that other correction has dispreferred status and is highly constrained in its occurrence (p. 380).

Schegloff et al. (1977: 374 ff.) hypothesized that self- and other-initiation are related to each other and that their relatedness is organized in favour of self-repair. They argue that there is ample evidence in support of these claims, in particular that: (i) opportunities for self-initiation come before opportunities for other-initiation; (ii) for those repairables (i.e., trouble-sources) where repair is initiated, same-turn and transitional space opportunities for self-initiation are frequently taken by speakers of the

trouble-source; (iii) the course of same-turn initiated repairs regularly leads to successful self-repairs in same turn and (iv) other-initiation in most cases yields self-repair.

These observations, which amount to the hypothesis that the organization of repair in natural conversations among NSs of the same language favours self-repair, were confirmed in a separate study by Schegloff (1979) who concludes that "self-initiation, same turn repair is the most common and most successful too" (1979: 268). More importantly, these observations have been confirmed by studies of NS/NNS and NNS/NNS interactions, both in educational and in natural contexts (Schwartz 1980, Gaskill 1980, Fathman 1980, Day, Chenoweth, Chun and Luppescu 1984, Chun, Day, Chenoweth and Luppescu 1982, Kasper 1985, Brock et al. 1986).

Gaskill (1980), for example, investigated repair work in NS/NNS conversations in non-educational natural contexts. The study showed that relatively few other-corrections were found in the conversations:

> "In approximately thirty minutes of taped conversations or approximately fifty pages of transcript, seventeen examples were found which are believed to be related to other-correction" (Gaskill 1980: 129).

Gaskill, therefore, argues that other-correction is an infrequent and highly restricted phenomenon and in particular that:

1. Other-corrections were relatively infrequent; 2. They were modulated in that they displayed uncertainty; and 3. Generally other-corrections occurred after modulated other-corrections or understanding checks or they occurred in the contexts of disagreement (Gaskill 1980: 136).

These findings were supported by Day et al.'s (1984) study in NS/NNS non-educational contexts. They found only a small percentage of errors by NNSs for which corrective feedback by NS interactants was provided (out of the 1595 NNS errors, only 117, or 7.3%, were singled out for corrective feedback) (1984: 42). Further, such corrective feedback occurs at transition points in conversations, not as interruptions.

In a similar study of errors, interactions and corrections in NS/NNS conversations, Chun et al. (1982) found that only a relatively small percentage (8.9%) of NNS errors were actually corrected by NSs. Chun et al. conclude

> "...in conversations between NSs and NNSs in social contexts, the NSs corrected the errors made by their NNS friends only infrequently. When they did provide correction, errors of a factual nature were most often corrected, followed by discourse and vocabulary corrections. Grammatical errors were seldom corrected" (Chun et al. 1982: 545).

In another study, Brock et al. (1986) analyzed 23 NS/NNS conversations to look at the frequency, quality and role of NSs' corrective feedback to NNSs in informal situations. They found that NSs' corrective feedback was not only infrequent but also, more importantly, few effects of the NS responses were observed on subsequent NNS conversation. They conclude, therefore, "This suggests, prima facie, the weakness of corrective feedback as an aid to acquisition" (1986: 234).

Schwartz (1980), on the other hand, looked at repair work in NNS/NNS natural contexts. She collected data from interactions of three pairs with different proficiency levels: 2 beginners, 2 intermediates and 2 advanced. Working with same proficiency dyads, the findings of the study showed that there was a clear preference for self-initiated self-completed repairs in NNS/NNS interactions. They also showed that when other-initiations are needed, speech partners would normally give preference for self-righting (i.e., repair) before other-repair was provided. This included allowing sufficient time for repeated attempts to bring about self-repair.

Kasper (1985) collected data from two different educational contexts: a context focusing on language-centred method (which emphasizes the importance of correction and grammaticality) and a context focusing on content-centred method (which emphasizes communication, understanding ability and the ability to express oneself about some content matter in the TL). The aim of the study was to investigate the frequency and the role of repair work in SLA. The findings of the study showed that in the content-centred method, self-initiated self-completed repairs were particularly prevalent. Kasper

argues that this is not surprising because the content-centred method, although clearly structured by institutional constraints, generates language more similar to non-educational discourse than the language-centred methods and hence the preference for self-repairs (1985: 209). However, both methods showed few instances of self-initiated other-completed repairs, which clearly demonstrates their dispreferred status.

To sum up so far: studies on repair in NS/NS, NS/NNS and NNS/NNS educational and non-educational contexts consistently confirmed Schegloff et al.'s (1977: 377) earlier conclusion that the organization of repair in conversations provides centrally for self-repair, which can be arrived at by the alternative routes of self-initiation and other-initiation. These routes are themselves so organized as to favour self-initiated self-completed repair.

3.2.2 Repair processes

Repair processes typically consist of three stages: repairable (i.e., trouble-source), initiation and outcome. Repairable refers to the trouble-source as located in an utterance. After locating the trouble-source, the second stage is repair-initiation, which could be performed either by the speaker (self-initiation) or by the interlocutor(s) (other-initiation). The outcome of initiation is either repair (i.e., self-and/or other-repair) or failure to make any repair.

On the basis of the importance of self-repair in conversations and guided by the purpose of the present study which looks NNSs' ability to produce modified comprehensible output (MCO), only self-initiated self-completed and other-initiated self-completed repairs will be considered here. This section will, therefore, look at the three-stage repair processes from this perspective.

3.2.2.1 Repairables

Schegloff et al. (1977) and Kasper (1985) identify several repairable (i.e., trouble-source) types which involve linguistic and content problems. Repairables in self-initiated self-completed repairs can be either linguistic or content (i.e., referential) trouble-source. Linguistic trouble-sources may be grammatical, morphological, lexical, or phonological. The speaker identifies a deviation from a morphological or syntactic rule and tries to repair their utterance according to their IL knowledge. In the following example, the repairable (trouble-source) is syntactic:

T: they are both trying to help their children -in which way
L: in they think the way they think are best -is best
(from Kasper 1985: 211)

There are also several types of lexical repairs which originate from lexical trouble-sources such as lexical choice and word replacement. For example:

L: I think Benjamin is worrying about it but so he want to get mm eller (or) to marry Elaine.
(from Kasper 1985: 211)

In this example, the NNS self-repairs himself by substituting a more specific word (marry) for a more general word (get). On the other hand, when the NNS is uncertain about the lexical meaning of the word, he/she often replaces an original word with specific meaning with a more general one:

L: only that er they want to have them er separated they don't want to have them together.
(from Kasper 1985: 211)

Similarly, with person reference repairables, referentially incorrect lexical choices are normally self-repaired:

L: it's about Benjamin and Elaine- his father- eller (or)- her father write to- to Tub.
(from Kasper 1985: 211)

Self-repair may also arise from content trouble-sources. For example:

A: And Bill -an'Bud got do:wn.
(from Schegloff et al. 1977: 371)

Other-initiations of repairs arise from difficulty in hearing or understanding and may occur at any linguistic or content (referential) level too.

3.2.2.2. Repair initiation

(i) initiation placement

Self-initiation placement: self-initiated repairs may be initiated in three positions (Schegloff et al. 1977, Schegloff 1979, Schwartz 1980, Færch and Kasper 1983c):
(a) They may be placed within the same turn. In this case, self-repair initiation is normally referred to as a "false start" (Færch and Kasper 1983c: 216). For example:

Hamid (NNS): h that uh i-i- that was a (1.2) uhh it has uhh a bar.
(from Schwartz 1980: 140)

(b) They may be placed in the turn's transition space, i.e., immediately after the end of the turn. In this case, self-repair initiation is normally referred to as a "new start" (Færch and Kasper 1983c: 216). For example:

Hamid (NNS): uh you uh could you uhh see (.6) uhhh ALL the places?
(from Schwartz 1980: 140)

Færch and Kasper argue that with false starts, the speaker always repeats one or more of the preceding words (e.g., I missed the bus THE TRAIN this morning), whereas with new starts the speaker may repeat the items which both precede and follow the trouble-source (e.g., I hate pea-soup I LIKE PEA-SOUP I mean) (1983c: 216).

(c) Or they can be placed in third turn to the trouble-source, i.e., in the turn subsequent to that which follows the trouble-source turn. For example:

Hannah: And he's going to make his own paintings.
Bea: Mm, hm.
Hannah: And - or I mean his own frames.
Bea: Yeah.
(from Schegloff et al. 1977: 366)

Other-initiation placement: These repairs occupy one position only: the turn immediately subsequent to the trouble-source turn. In this type of repair the speech partner has a hearing or understanding problem and must therefore initiate repair and give the speaker of the trouble-source the opportunity to repair for himself/herself. For example:

L: er then Peter were made oh nah angry with James
T: good - er Peter-
L: was
T: yes
(from Kasper 1985: 205)

(ii) Repair initiation techniques and signals

Self-repair initiation techniques and signals: Various initiation techniques are used by NNSs to signal the initiation of self-repair:

(a) Lexical means: these include the use of words and expressions such as *I mean, you know, I wanted to say, well, now, oh yes but*, etc. For example:

Ming (NNS): But the test will be on that too. I mean (.2) today's quiz.
(from Schwartz 1980: 141)

(b) Non-lexical means: these include interruptions and disfluencies such as *cutoffs* (i.e., words which have not been fully articulated with their endings are cut off abruptly), *pauses, uh's, er's*, etc. Examples:

cutoffs:
Natasha (NNS): hh yyeah but you know what I always have a pro- some kind of problems after school.
(from Schwartz 1980: 141)

pauses:
Hamid (NNS): h that uh i-i- that was a (1.2) uhh it- has uhh a bar.
(from Schwartz 1980: 142)

uh's:
Hamid: Uh you uh could you uhh see (.6) uhhh all the places?
(from Schwartz 1980: 142)

Færch and Kasper argue that self-repairs are often preceded by lexicalized filled pauses (e.g., *I mean, that is, I wanted to say*) whose psycholinguistic function is to gain time for planning. They also argue that these also operate as repair signals which communicate to the interlocutor that

> "what follows or what precedes is to be interpreted as a repair on previously communicated information and not as additional information. This is particularly important in connection with new starts as these are typically placed at a possible completion point, i.e., where a new move might begin" (Færch & Kasper 1983c: 216).

(c) Extralinguistic signals: these include eye gaze, hand movement, lip parting, etc. They normally signal repair-initiation in combination with *uh* and a pause. Typically, to initiate self-repair, NNSs would often pause, say *uh*, turn their eye gaze away from the speech partner(s), and look either up or down, sometimes fluttering their eyelids. The following is an example of eye gaze:

Mari: My friend is a mm s'student now she go to (*looks away, eyelids blink up and down*) uh Southern California (.2) uh (1.0) uhh.
(from Schwartz 1980: 142)

Similarly, here also an example of hand movement which helps to signal self-repair: (Teresa and Farokh)

Terasa: you know (.6) and day was coming uh (.6) (*eye gaze directed at Farokh and looks up*) about two minutes (*hand rotating and returns eye gaze to F.*) (.6) each-each-uh between each one.
(from Schwartz 1980: 142)

Other-repair initiation techniques and signals: Schegloff et al. (1977: 379-380) describe these as follows:

> "...other-initiations of repairs locate problems of hearing and/or understanding as 'obstacles' to the production of what would otherwise occupy the sequential position in which they are placed - an appropriate 'next turn' sequentially implicated by prior turn. Other-initiations of repairs undertake to have 'obstacles' removed in the service of the production of a sequentially implicated text."

On the basis of this description, it was assumed that when interlocutors have difficulty in hearing and/or understanding the NNS's current/previous utterance (or part of it), they are likely to use a group of "turn-constructional devices" (Schegloff et al. 1977: 380), which are defined as signals initiated by the interlocutors, the function of which is to get the original speaker to provide clarifications (i.e., to make his/her output comprehensible).

Turn-constructional devices employed to initiate repair include the use of *huh's, what, question words (who, where, when), a partial repeat of the trouble-source plus a question word (e.g., all the what?), partial repeat of the trouble-source turn.* Examples:

Huh:
A: Wul did'e ever get married 'r anything?
B: Hu:h?
(from Schegloff et al. 1977: 367)

What:
A: Have you ever tried a clinic?
B: What?
(from Schegloff et al. 1977: 367)

Question words who, where, when:

Who:
A: Oh Sabbie's sistuh hadda ba:by bo:way
B: Who?
(from Schegloff et al. 1977: 367)

Where:
A: By the way, I haveta go ta Lila's.
B: Where?

(from Schegloff et al. 1977: 367)

A partial repeat of the trouble-source turn, plus a question word:

A: No I went to a shower
B: To a where?
(from Schegloff et al. 1977: 367)

NNS: This house is maybe broken
NS: Is what?
(from Pica et al. 1989: 87)

Another type is partial repeat of the trouble-source turn:

A: Well, Monday, lemme think. Monday, Wednesday, an'Fridays I'm home home by one ten.
B: One ten?
(from Schegloff et al. 1977: 367)

Another type is the use of *you mean* plus a possible understanding of the prior turn. In most cases, the *you mean* format employed is that of a guess, candidate or 'try' which takes the shape of a "correction invitation format" (Schegloff et al. 1977: 379), or what Day et al. (1984: 31) termed "non-corrective confirmation checks" to clear the trouble:

A: Why did I turn this way.
B: You mean homosexual?
(Schegloff et al. 1977: 368)

NNS: So you're- um:so in England or: mainland maybe um /hauzen/- they have a very old house?
NS: In England?
(from Day et al. 1984: 31)

In this example the NS is not trying to provide a corrective feedback, but rather he was trying to figure out if the NNS was referring to England or the U.S. mainland.

Another type of other-initiation consists of requests for elaborations, expansions, explanation or paraphrasing:

NNS: This car gave us patton
NS: I still don't understand what that word is.
(from Pica et al. 1989: 87)

Another type of requests for clarification may take the form of an explicit statement of non-understanding (e.g., *sorry I can't understand you, I can't understand you, I don't follow*, etc). For example:

NNS: She very high
NS: Sorry?
(from Ellis 1985a: 136)

Other-initiation of repairs are often signalled by various "speech-preparatory actions" (Schwartz 1980: 146) by the interlocutor. These include *posture shifts, expression change, lip parting*, etc.:

Teresa: So um (.2) do I speak (.2) quite fast?
Farokh: (*head forward, eyebrows up*) <u>You</u>?
Teresa: Yeah
(Schwartz 1980: 147)

3.2.2.3 Repair completion and the outcome

The outcome of repair initiation can be, amongst others, failure to repair, repetition of the trouble-source utterance without modification, appeal to the interlocutor(s) for help or successful repair completion. These outcome-types and others will be discussed in more detail in Ch 6. In general, however, when NNSs are asked by others for clarifications or when they realize that their current/previous utterance (or part of it) is not comprehensible, they follow/adopt various repair and communication strategies in production to make themselves understood to their interlocutors. The various communication strategies and repair work which they follow while interacting with other native and nonnative speakers of the TL will be reviewed in the following section.

3.3 Learner Communication Strategies

The term communication strategies was coined by Selinker (1972) in his account of the processes responsible for IL development. Subsequently, extensive research on L2

learners' communication strategies was conducted by Færch and Kasper (1980, 1982, 1983b,c, 1984, 1986, 1987b) and others (e.g., Corder 1978, 1983, Færch, Haastrup and Phillipson 1984, Haastrup and Phillipson 1983, Morrison and Low 1983, Tarone 1977, 1981, 1983, Varadi 1983, Bialystok 1983 and Raupach 1983).

Færch and Kasper (1983b: 36) provide the most convincing and psychologically real definition of communication strategies. They define them as follows:

> "Communication strategies are potentially conscious plans for solving what to an individual presents itself as a problem in reaching a particular communicative goal."

(For other attempts to define communication strategies, see, e.g., Tarone 1983 and Corder 1983.)

On the basis of Færch and Kasper's definition, communication strategies may be divided into two subtypes: communication strategies aimed at solving problems in speech production and communication strategies aimed at solving problems in speech reception. Since the field of investigation of the present study considers L2 learners' production, it will be beyond the scope of this research to look at communication strategies for reception. For this reason, only NNSs' use of **communication strategies in production** will be discussed here.

According to Færch and Kasper (1983b) and Corder (1983), communication strategies in production can be subcategorized into two types of behaviour that L2 users may follow when faced with a communication problem: avoidance behaviour, which manifests itself in reduction strategies, and achievement behaviour, which underlies achievement strategies. Typically, in the former case, NNSs renounce (part of) their original communication goal, while in the latter case, they attempt to maintain their original aim by developing an achievement plan (Færch and Kasper 1984: 48). Corder (1983: 17-18) refers to these two subcategories of communication strategies as "message adjustment strategies" and "resource expansion strategies", respectively. Reduction strategies according to Færch and Kasper could be either formal reduction (i.e.,

phonological, morphological, lexical and grammatical) or functional reduction (i.e., actional, propositional, or modal) (Færch and Kasper 1984: 49). Corder also subcategorizes message adjustment strategies into topic avoidance, message adjustment, semantic avoidance, and message reduction (1983: 17).

The present study concentrates on **achievement strategies** in production only. The reason for concentrating on achievement strategies and excluding reduction strategies is to see how NNSs solve the linguistic problems which face them in reaching their communicative objectives, rather than how they avoid these problems by reducing their communicative objectives (cf., Haastrup and Phillipson 1983: 141, for a similar argument). In other words, what matters for the purpose of the present study is to see how NNSs make their output comprehensible when they realize that their current or previous utterance (or part of it) is not comprehensible, or when their speech partners signal comprehension difficulty and request clarification.

As mentioned above, achievement strategies are means which NNSs follow to solve problems in communication by expanding their communicative resources rather than by reducing their goals. The problems to be solved by means of achievement strategies may occur at all linguistic levels. Achievement strategies are also subcategorized into two types: those which relate to problems in the planning phase (known as compensatory strategies) and those which relate to problems in the execution phase (known as retrieval strategies) (Færch and Kasper 1983b: 45).

3.3.1 Compensatory strategies

Compensatory strategies are subclassified according to what resources NNSs draw on in trying to solve their linguistic problems. Two types of compensatory strategies are identified: self-dependent strategies and appealing strategies (cf. Færch and Kasper 1983b: 46-50).

3.3.1.1 Self-dependent strategies

These are described as strategies which NNSs follow to make themselves understood in the TL without appeal for help from a speech partner. Self-dependent strategies may further be subclassified on the basis of the communicative resources which NNSs draw on in order to compensate for the linguistic means which are not available or accessible to them at the time of the utterance:

(i) L1/L3-based strategies: these refer to the use of the L1 or any other second/foreign language other than the TL at one or more linguistic levels. There are two types of L1/L3-based strategies:

(a) If an L1/L3 feature is used, this is referred to as *code switching* (or language switch, or borrowing (Corder 1983, Færch and Kasper 1983b, 1984)). For example:

NNS: do you want to have some ah-Zinsen or do you want to have some more money? (Zinsen is German for interest)

(b) Interlingual transfer: there are two types of interlingual transfer:

Foreignizing: this strategy refers to the NNS's adapting a non-IL element to the IL system phonologically and/or morphologically to make it appear like an L2 form. For example, the learners uses the Malay word *kudrat* (fate) in *God's Kudrat* to form *fate from God* (The learner pronounces the L1 word *kudrat* with an English accent.) (Ibrahim 1990).

Literal translation: this refers to the NNS's verbatim selection of an L1/L3 form. For example, the learner uses the Danish word *grøntsager* (vegetables) to form *green things.*

(ii) IL/L2-based strategies: these strategies refer to various ways of problem-solving based on the NNS's IL/L2 knowledge:

(a) Substitution/replacement: this refers to the substitution of a missing item or rule by another one, which the NNS thinks conveys the same meaning. For example, the NNS selects *if* instead of *whether* in writing when uncertain about the spelling of *whether* (i.e., with or without 'h').

(b) Generalization: in adopting this strategy, the NNS tries to find another element which may convey the intended meaning, for example, the use of *animal* to refer to *rabbit.*

(c) Paraphrasing: the NNS may resort to paraphrasing to compensate for an unavailable (lexical) item. Paraphrasing may be achieved via description, exemplification or circumlocution (Tarone 1977, Færch and Kasper 1983b):

Example of description:
NNS: the thing to cook water in (for *kettle*).

Example of exemplification:
NNS: peas, carrots, potatoes (for *vegetables*).

Example of circumlocution:
L: ...some people have a car - and some people have a er bicycle - and some people have a er - erm - a cykel there is a m motor
NS: oh a bicycle - with a motor
(from Færch and Kasper 1983b: 49)
In this example, the NNS was trying to explain 'moped.'

(d) Word coinage: this involves the NNS's attempt to use the TL in a creative way. For example, the NNS says pictures place (to refer to *gallery*).

(e) Restructuring: this involves the NNS's developing an alternative plan to complete an already intended message when he/she realizes that he/she cannot complete a plan which is already being executed. For example:

NNS: my tummy - my tummy is - I have (inaudible) I must eat something
(from Færch and Kasper 1983b: 50)
(all examples were taken from Færch and Kasper 1984: 45-61 except when indicated otherwise)

(f) Reordering: in this case a unit is stopped before completion and the insertion of a new item requires a reordering of the clause:
Natasha: Wha- what kind of English do they - what do they say?
(from Schwartz 1980: 143)

(iii) Non-linguistic strategies: these strategies refer to the NNSs' use of mime, gestures, sound imitation, etc., which facilitate the comprehensibility of their output. For example:

NNS: but it's a big house where just THEY live (*gesture shapes house*)
(from Færch et al. 1984: 159)

Non-linguistic strategies are frequent in face-to-face interaction. These strategies are often used to support other - verbal - strategies, although they are sometimes used as the NNS's one and only attempt at solving a communication problem. They also function to signal an appeal to the interlocutor (Færch and Kasper 1983b: 52).

3.3.1.2 Appealing strategies

Unlike self-dependent strategies, here NNSs appeal to their speech partner(s) if they decide that the problem they are experiencing needs other-assistance. Signals for appeal may be direct or indirect (Tarone 1977). Færch and Kasper (1983b: 51) argue that an

unsuccessful self-dependent strategy may function as a "problem indication" with the function of appeal, though this is unintended by the NNS. Problem indication may take the form of implicit signal of uncertainty (e.g., hesitation phenomena, unsuccessful self-repair, slips), explicit signal of uncertainty (e.g., *I don't know how to say this*) or the form of a direct appeal (e.g., *what is 'knust'*?) (Færch and Kasper 1984: 51-57).

3.3.2 Retrieval strategies

These strategies refer to the execution phase of the speech. The NNS may have difficulty in retrieving a specific IL item and may, therefore, adopt an achievement strategy in order to get at the problematic item. Glahn (1980) identifies several ways in which NNSs try to retrieve an IL item: waiting for the term to appear, appealing to formal similarity, retrieval via semantic fields, search via other languages and retrieval from learning situations (see Glahn 1980, Færch and Kasper 1983b: 52, and Ellis 1985a: 185 for further details).

Word search is another repair operation which occurs when a word/expression is not available when it is "due". Schwartz (1980: 143) argues that in most cases, NNSs' word search involves searches for a lexical item (e.g., bungalow, flight, hypothesis, etc). Sometimes word searches take the form of appealing strategies, in which case the speakers confer with their interlocutors to agree on how to connect a word with its exact meaning. Speakers use a wide range of verbal strategies (e.g., synonyms, definitions, exemplifications and paraphrasing) and extralinguistic strategies (e.g., eye gaze, lip movement, hand rotation, posture changes, eye fluttering and iconic gestures) in their word search operations.

Ellis (1985a: 183) points out that retrieval strategies in particular are difficult to identify in actual data because they will not be manifest in the actual performance of the language learner. He suggests that the use of introspection techniques in addition to the analysis of speech data may help to identify the extent to which L2 learners use these strategies.

3.4 Summary and Conclusions

In this Chapter, I have considered different empirical findings, observations, explanations and conclusions relating to the relationship between input data and output data, repair mechanisms and learner communication strategies. Little research has so far investigated the correlation between input and performance ability in relation to internal and external variables and in relation to wider aspects of language (e.g., pragmatic, discourse). It is not surprising, therefore, that research findings are not consistent and that it is rather difficult to draw any conclusion with confidence. More importantly, it was pointed out that it is doubtful whether correlation studies have any explanatory power, or can account for all aspects of NNSs' performance (or output data). It was argued that learner-internal mechanisms are probably the main factors which determine the nature of output data although other factors such as perceptual saliency and frequency of input data might play a role. Studies of repair and communication in the second language have investigated repair mechanisms and communication strategies and looked at how NNSs make themselves understood to their speech partners when there is a breakdown in communication.

There are still many questions which need to be answered. For instance, it is not entirely clear whether NNSs' performance is an impoverished version of their comprehension ability. Also, one wants to know the extent to which learner-internal systems determine the quantity and the quality of their performance ability in relation to other (external) factors such as the frequency with which input data were presented.

As mentioned at the beginning of the Chapter, the fourth and the most important area for the purpose of the present study is the one which relates to the significance of L2 learners' production in SLA. The various theoretical positions and empirical findings relating to this area will be reviewed in the following Chapter.

Chapter Four

Second Language Learners' Performance and SLA

(review of previous research)

Chapter 2 shows that a considerable amount of research has been conducted to investigate the role of input and interaction in SLA (e.g., Hatch 1983b, Tarone 1981, Ellis 1984a, 1985b, Long 1980, 1983a,d, Krashen 1981a,b, 1982a, 1985). These researchers and others have investigated the role of input in SLA either in a naturalistic setting or in a classroom setting. The most recurring claim is that input and interaction facilitate both the route (e.g., Krashen 1981a, 1982a, 1985, Long 1983a, Hatch 1983b) and the rate/success (e.g., Seliger 1977, Bialystok 1978, Snow and Hoefnagel-Hohle 1982) of second language acquisition. Most of these studies have concentrated typically on (a) NS/NNS interaction and (b) the role of (modified) input and interaction in providing **comprehensible input.** Some researchers have argued, however, that NNS/NNS (as compared to NS/NNS) interactions constitute better contexts in which negotiated interactions may be provided (Gass and Varonis 1985a,b 1986, Varonis and Gass 1985a,b). More importantly, it was recently pointed out that input and interaction studies, although providing empirical and theoretical claims about the important role played by comprehensible input in the process of SLA, "have, in effect, diverted attention away from studying interlanguage modifications produced by language learners as they make their output comprehensible input to the NS" (Pica 1988: 48).

This Chapter will review the theoretical positions and the empirical studies which have addressed the issue of NNS/NNS interaction and that of second language learners' production of comprehensible output. Section one will review the theoretical background to the present study. Section two will consider the empirical studies which have been conducted to date to investigate NNSs' production of comprehensible output. Section three provides a summary of the main points covered in this Chapter as well

as the conclusions reached. And section four introduces the hypotheses delineated for the present investigation.

4.1 Background to the Present Study

In this section, two main issues will be considered: (i) NNS/NNS encounters in relation to NS/NNS encounters, and (ii) comprehensible output as a theoretical construct.

4.1.1 NS/NNS and NNS/NNS interaction

It was mentioned above that Gass and Varonis (1985a,b, 1986) and Varonis and Gass (1985a,b) have consistently argued that NNS/NNS interactions provide more opportunities for the **negotiation of meaning** which ensures the provision of comprehensible input than NS/NNS interactions. For example, Varonis and Gass (1985b) examined interactions between NS/NS, NS/NNS and NNS/NNS adults. The subjects of the study were grouped in three ways so as to give fourteen conversational dyads between NNSs, four conversational dyads between a NS and a NNS, and four conversational dyads between NSs. Most of the members of the dyads had not met before the time of the study. The conversations were audio-taped and then the first five minutes of each conversation were transcribed for analysis.

The results showed negotiated routines were not common in NS/NS discourse: in the four dyads, there were only two occurrences of such a routine, one in a male pair and one in a female pair (an average of .5 non-understanding routine per encounter). It was also obvious that NS/NNS dyads do evidence a fairly regular use of this type of routine: there were eleven occurrences in the four dyads (an average of 2.75 non-understanding routine per encounter). NNS/NNS pairs showed the greatest evidence of non-understanding: 144 occurrences in the fourteen dyads (an average of 10.29 non-understanding routine per encounter). By comparing the incidence of non-understanding routines among the three populations of the study, it was found that the differences

between the NNS/NNS dyads and each of the other two groups was significant at the level of .0005.

The results also showed that within the group of NNS/NNS dyads, those who had the most in common (in terms of L1 background and L2 proficiency) had the least to negotiate. Hence, the lowest incidence of non-understanding routines occurred in those dyads that shared a language and a proficiency level, to give an average of 4.75. (This average is still higher than that of the NS/NNS pairs.) Conversely, the highest incidence of negotiation routines was found in those dyads that shared neither a language nor a proficiency background, to give an average of 16.00 routines per dyad. Varonis and Gass concluded, therefore:

> "The greater the degree of difference which exists in the backgrounds of the conversational participants, the greater the amount of negotiation in the conversation between two non-native speakers" (Varonis and Gass 1985b: 84).

Overall, the results of the study indicated that a greater amount of negotiation work took place in NNS/NNS discourse than in either NS/NS or NS/NNS discourse. This suggests that negotiation of meaning occurs with greater frequency in NNS/NNS dyads than in those dyads which include a native speaker.

Varonis and Gass suggest that such differences are due to the fact that NNS/NNS conversations differ from those of NS/NNS with regard to actual or potential breakdown of interaction. That is, other-corrections (i.e., native speaker corrections) are seen as embarrassing between interlocutors who are supposedly on an equal footing in the conversation (Schegloff et al. 1977). But when the interlocutors have shared partial competence, the responsibility for failing to understand may reside with either the speaker or the hearer or both. In addition to the shared knowledge argument, as learners, NNSs have little to lose by indicating non-understanding, and therefore other NNS-corrections may be seen as less embarrassing and therefore are likely to be more frequent. (In fact in the NNS/NNS dyads, participants frequently commented on how bad their English was.) NNSs may not lose face by negotiating meaning in the same

way as they might otherwise feel with NSs where the inequality in the status of the participants (with regard to the language medium) is likely to discourage the negotiation of the meanings, since it amplifies rather than masks the differences between the (two) participants. As a result there is a greater tendency for conversations to proceed unnegotiated when a NS is introduced. Varonis and Gass concluded that discourse resulting from NNS/NNS interactions serves at least two important functions for NNSs:

> "First, it allows them a non-threatening forum within which to practise developing language skills. Second, it provides them with an opportunity to receive input which they have made comprehensible through negotiation" (Varonis and Gass 1985b: 87).

Several SLA researchers argue that the negotiation of meaning is important because it encourages SLA by creating greater opportunities for the provision of comprehensible input (e.g., Long 1983a,d, Hatch 1983b, Pica et al. 1989). In the light of these claims, Varonis and Gass's study further demonstrates that NNS/NNS interactions provide even more opportunities to receive comprehensible input which the NNSs themselves have made comprehensible through negotiation than NS/NNS interactions. Varonis and Gass (1985b: 87) argue that this also implies that NNS/NNS interaction "facilitates the second language acquisition process", confirming Schwartz' (1980: 152) claim that "second language learners can learn more from one another than they think they can." The results also may also be taken as a starting point to stimulate further research which aims to determine whether NNS/NNS interactions are more advantageous, comparable to or less advantageous than NS/NNS interactions in other areas of SLA research, for instance, with regard to the opportunities they provide NNSs with to produce modified comprehensible output.

Aston (1986) argues that the high frequency of certain discourse procedures such as self-repetitions, other-repetitions, comprehension checks, confirmation checks and clarification checks found in most interaction studies (such as those by Scarcella and Higa 1981 Long 1983a and Varonis and Gass 1985b) does not necessarily suggest that NS/NNS and NNS/NNS interactions play important role in facilitating SLA. He argues

that interaction studies have largely ignored "the social aspect of language as a means of establishing and maintain rapport, both in interpreting their findings and in drawing implications for teaching" (p. 131).

He argues, first of all, that these studies do not describe the function of these discourse procedures adequately. For instance, they do not show the extent to which the high frequency of such procedures indicates real negotiation of meaning (when there are non-understanding routines) or function as an act of encouragement to keep the conversation going (conversational continuants) (cf., Varonis and Gass 1985b). More importantly, the negotiation of meaning itself may not necessarily result in real comprehension since in many cases the negotiation of meaning only results in "formal understanding" rather than "substantive understanding" (Aston 1986: 134). (For a similar argument, see Hawkins 1985, also Ch 3.) This consequently casts doubt on the argument that the negotiation of meaning always makes the input to the learner more comprehensible and, accordingly, on Krashen's (1982a, 1985) argument that providing comprehensible input promotes SLA. Similarly, if the negotiation of meaning always results in acquisition, there are situations in which an incorrect lexical item or less native-like grammatical structure will be acquired, in particular in interactions between NNSs.

With specific reference to Varonis and Gass's (1985b) study reported above, Aston argues that the fact that most dyads were composed of speech partners who had not met before the experiment was conducted and were required to introduce themselves to each other may have a significant effect on the characteristics of the interaction, including the frequency of the non-understanding routines which Varonis and Gass set out to investigate (pp. 131-132). Conversational preliminaries (which frequently precede focusing on a topic) are likely to occupy different proportions of the five minutes examined according to the dyad type, in particular NNSs may be supposed to take a longer time to introduce themselves and to find shared ground to talk about than NSs. At the same time, the ability/desire to initiate and maintain rapport may vary considerably from one dyad to another and is likely to play a role in the negotiation of

meaning and therefore determine the frequency of non-understanding routines in the conversational activity investigated. Aston speculates:

> "It is thus possible that the observed difference in frequency partly depends on differences in the conversational activity carried out by the various dyad types in the observation period" (Aston 1986: 132).

Moreover, Aston cites evidence from several studies (e.g., Corsaro 1977, Goffman 1981b) to the effect that the frequency of these discourse procedures not only reflects the occurrence of trouble-source or conversational breakdown, but also adjust the comprehensibility of an already comprehensible utterance to suit a certain socially accepted form. For instance, he reports that Goffman (1981b: 272) has shown that such discourse procedures may be used to direct attention to a 'remarkable' rather than a 'faulty' matter (p. 138). In the light of these arguments, Aston contends that the high frequency of discourse procedures such as self-repetition, other repetition, comprehension checks, confirmation checks/requests and clarification requests in NS/NNS and NNS/NNS discourse may be an indication and reaffirmation of successful interaction:

> "Through them participants can jointly reaffirm the possibility of satisfactory communication and satisfying rapport through talk. From this point of view, a greater frequency of the component procedures in NL [native/learner] and LL [learner/learner] interaction simply indicates more frequent attempts to achieve such displays" (Aston 1986: 139).

He therefore concludes that the frequent occurrence of these procedures is not only to negotiate meaning and achieve comprehensible input, but more importantly to confirm the mutual satisfactoriness of the interaction. Based on these arguments, Aston suggests that it is the social context of negotiation which maintains rapport and which contributes to the high frequency of these procedures is the factor that influences acquisition because a greater frequency could be the result of a greater effort to maintain rapport (Aston 1986: 140).

It is important to note, however, that although Aston is justified in drawing attention to the social aspect of the negotiation of meaning in the use of the discourse procedures he discusses, there are several points and reservations about his arguments. First, Aston's analysis is not incompatible with that of interaction studies. Indeed, the two interpretations/analyses are complementary as Aston himself indirectly acknowledges:

> "These procedures thus may contribute as much to maintain rapport as to achieve correct understanding of utterances" (Aston 1986: 140).

Second, and more important, the supporting evidence which he cites (p. 131) from Fillmore (1979) to the effect that "the learner should *minimize* negotiation by pretending that input is comprehensible even when it is not, and by selecting utterances whose meaning does not requite negotiation as output" is open to criticism for two reasons. Firstly, it is doubtful that minimized negotiation promotes SLA. For instance, it is not clear how pretending that the input is comprehensible when it is not will facilitate SLA, nor is it clear how this will enhance social integration. On the contrary, it is well-established that learners who participate in conversations more frequently generate more comprehensible input, whereas learners who avoid (frequent) interaction generate less comprehensible input (Seliger 1975, Corder 1978, Long 1983a, Wong-Fillmore 1985). Seliger (1975) calls the former high-input generators and the latter low-input generators. Similarly, Corder (1978) calls the former risk-taking learners and the latter risk-avoiding learners. By taking risks (e.g., guessing, paraphrasing, using circumlocutions, etc.), the former generate more comprehensible input and produce more comprehensible output, whereas by avoiding risks (e.g., saying less, opting out, etc.), the latter generate less comprehensible input and produce less comprehensible output. Secondly, it is also doubtful that a learner can achieve social integration (which Aston is advocating as a key variable in language acquisition) without the ability to comprehend the input received or produce comprehensible output. As a matter of fact, it is more reasonable to argue that the ability to get engaged in interaction, negotiate meaning, attract comprehensible input and produce comprehensible output is a prerequisite for initiating and maintaining rapport and successful social integration. Indeed, it is likely to be much more difficult to initiate and maintain rapport and successful social integration with L2

learners who are still at an early stage of SLA than those who can negotiate meanings, receive comprehensible input and produce comprehensible output.

Third, SLA research (e.g., Kleifgen 1985, Ellis 1985b) also shows the adjustments in the NSs' input to NNSs, including the frequency of occurrence of these discourse procedures, matches the proficiency level of the NNS addressee(s) such that the less proficient the NNS, the greater the frequency of these discourse procedures. The most likely explanation for this phenomenon is that the difference in the frequency of these procedures is related to the level of linguistic competence of the NNS in the TL rather than to the desire to initiate and maintain rapport since this desire is likely to be the same for all learners irrespective of their varying proficiency levels.

Briefly, it is possible that the desire to initiate and maintain rapport and social integration may in part account for the high frequency of certain discourse procedures in NS/NNS and NNS/NNS interactions (Aston 1986). However, the more likely explanation for their frequent occurrences in NS/NNS and NNS/NNS interactions is the one which relates to the need to negotiate meaning, attract comprehensible input and produce comprehensible output. This enables interactants to achieve mutual understanding and satisfactoriness of the interaction.

4.1.2 The comprehensible output as a theoretical construct

It was mentioned earlier that Pica (1988: 48) has pointed out that input and interaction studies have diverted attention away from studying interlanguage modifications produced by language learners as they make their output comprehensible to the native speakers. Indeed, the main bulk of literature on the roles of comprehension ability and performance ability in SLA so far conducted has emphasized the role of the former while deemphasizing at the same time the role of the latter. Although such critical arguments have been put forward by several researchers (e.g., Celce-Murcia 1983, McLaughlin 1987, Pica 1987), it was Swain (1985) who first strongly argued that comprehensible input is not sufficient for successful SLA, but that opportunities for

NNSs to produce *comprehensible output* are also necessary. Swain, among others (e.g., Hatch 1978b, Hatch et al. 1986, Schachter 1983, 1984, 1986, Sato 1986, and Brock et al. 1986), drew attention to the need to put more emphasis on production, particularly the modifications NNSs make to their IL when NSs signal difficulty in understanding, claiming that such modifications are realized in native-like L2 production.

In her study, Swain (1985) collected data from 69 grade 6 students whose MT was English and who were learning French as a second language in the formal classroom setting of a French immersion programme. The children made frequent use of the TL outside the classroom setting. The input they received was largely that of the NS teacher talk and NNS peer talk. The children were taught entirely in French in kindergarten and grade 1, about 80% in French in grades 2, 3, and 4, about 60% in French in grade 5, and about 50% in French in grade 6 - the year they were tested. The aim of the study was to consider the second language proficiency exhibited by these French immersion students, relating their output at a macro-level to their language learning environment. The study sought to determine, therefore, the extent to which certain components of language proficiency represented in the theoretical framework as linguistic traits were empirically distinguishable and were differentially manifested in oral and written tasks. The linguistic traits examined were grammatical, discourse, and sociolinguistic competences. Each trait had a matrix of three cells: oral production, multiple choice and written production. For each cell in the matrix, a test and relevant scoring procedures were developed.

The results of the grammatical oral production, multiple choice, and written production test showed that NSs scored significantly higher than the immersion students, indicating clearly that, although the immersion students were doing quite well, they had not acquired native-like grammatical competence. With regard to the discourse trait in the case of oral production, NSs rated significantly higher than immersion students on time orientation (one of four categories). The other three categories (setting the scene, identification and logical sequence of events) showed no significant differences. In the case of multiple choice no significant differences were observed. In the case of written

production, NSs rated significantly lower than immersion students on punctuation (one of six categories). (The other five categories are: basic task fulfillment, identification, time orientation, anaphora and logical connection.) However the global score for the written production revealed a significant difference between the mean score obtained by the NNS and NS groups in favour of the NSs. The sociolinguistic scores showed that NSs performed significantly better on the various sociolinguistic tasks than immersion students. The results of the sociolinguistic scores also showed that in those categories in which grammatical knowledge inevitably plays a key role in the production of the appropriate form, such as the conditional, immersion students' performance was considerably inferior to that of the NS on both the oral and written tasks. Swain asserts that this result is not surprising in the light of the grammatical results, which showed that immersion students are relatively weak in verb morphology. This, in effect, means that some aspects of sociolinguistic performance depend on grammatical knowledge (p. 244).

The findings of the study indicated, first of all, that differences between NS and NNS groups depended on the trait being measured. That is why the difference for grammar was large regardless of the method of testing; for discourse, the difference was small regardless of the method of testing. Second, there is considerable interrelationship between the sociolinguistic and the grammatical traits in that some tasks designed to measure sociolinguistic performance depended on grammatical knowledge. Lack of competence in the latter negatively affects the former. Third, and most important of all, the overall results showed that although immersion students have in some respects reached a high level of TL proficiency, they are still significantly different in their use of some aspects of the language from NSs. Such differences are particularly evident in those aspects of communicative performance which require the use of grammatical knowledge.

Swain concluded that in spite of the fact that these immersion students have been receiving comprehensible input in the TL for almost seven years (i.e., they understood whatever they were taught and they focused on the meaning), "the target system has not

been fully acquired" (p. 246), and therefore, they failed to become native-like speakers. Swain argued that this was not because their comprehensible input was limited (which it was not), but because their comprehensible output was. It was limited in two ways: students were not given the opportunity to use the TL in the classroom, nor were they 'pushed' in their output (p. 249). That is, there was no incentive for them to analyze further the grammar of the TL because their current output appeared to succeed in conveying their intended messages.

In the light of these findings, Swain doubts that interactions and comprehensible input (Krashen 1981a,b, 1985, Long 1980, 1983d) on their own are enough for SLA to occur, especially in the case of grammar. She claims, instead, that there is a need for **comprehensible output** which is independent of comprehensible input. She claims that there is a strong argument for the necessity of comprehensible output in SLA on the assumptions that (a) One learns to speak by speaking, one learns to read by reading, and one learns to write by writing (Smith 1978, 1982, Hatch 1978b). (b) A student needs to be 'pushed' in his/her output. That is, students (or L2 learners in general) must be pushed to use alternative means if communication breakdown occurs. These two interrelated factors imply that the learner will deliver messages that are not only conveyed, but conveyed precisely, coherently and appropriately. (c) It gives an opportunity for the learner to try out his/her hypotheses about the TL to see if they work. And (d) it forces the learner to move from semantic processing to syntactic processing (Swain 1985: 248-250).

According to Swain, this explains the phenomenon of those who can understand a language and yet can only produce limited utterances in it. They have just never got a syntactic analysis of the target language, since there has been no demand on them to produce it. She suggests that:

> "...producing the target language may be the trigger that forces the learner to pay attention to the means of expression needed in order to successfully convey his or her own intended message" (Swain 1985: 249).

These arguments amount to the claim that had more demand been placed on these learners to make themselves understood, they would have had opportunities to produce comprehensible output, and, in so doing, test hypotheses about their interlanguage (IL), experiment with new structures and forms, and expand and exploit their IL resources in more creative ways.

Swain hypothesizes that although conversational exchanges are a prerequisite to acquisition, they are not themselves the source of acquisition derived from comprehensible input, but rather they are the source of acquisition which is derived from comprehensible output. Such output extends the linguistic repertoire of the learner as he or she attempts to create precisely and appropriately the meaning desired. She sees comprehensible output as something different from comprehensible input, and as playing a different role:

> "Comprehensible output...is a necessary mechanism of acquisition independent of the role of comprehensible input. Its role is, at minimum, to provide opportunities for contextualized, meaningful use, to test out hypotheses about the target language, and to move the learner from à purely semantic analysis of the language to a syntactic analysis of it " (Swain 1985: 252).

Swain did not provide any transcripts of the students adjusting their IL output to make it comprehensible. The immersion data on which she based her claims in language skill areas provided only broad descriptions of the students' language learning environment. What she has offered us is in fact a major theoretical claim regarding how L2 learners might progress in their language development. As such, her claims are essentially theoretical and are in need of empirical grounding. The following section will, therefore, review the empirical studies which have examined NNSs' IL adjustments in the direction of comprehensible output.

4.2 Comprehensible Output and SLA: Empirical Studies

Swain's arguments for the comprehensible output hypothesis and the related IL modification claims by Hatch et al. (1986), Sato (1986), Brock et al. (1986) and Schachter (1984, 1986) were investigated by Pica (1988) and Pica et al. (1989). In this section, these two studies will be reviewed in detail.

Pica (1988) examined negotiated interactions between a NS and ten NNSs of English to find out how the NNSs make their IL utterances comprehensible when the NS indicated difficulty in understanding them. That is to say, the study sought to isolate and describe NNS output as input to the NS during negotiated interactions. The main purpose was to test the assertion of several SLA researchers (Swain 1985, Hatch et al. 1986, Schachter 1986) that the NNSs would respond to the NS by modifying IL morphosyntax, phonology, and lexis and, in doing so, would employ more target-like use of the TL. The assumption is that NNSs would not only modify these aspects of their IL but would do so with target-like English.

Data for the study were obtained from Pica's earlier (1982) study. The data consisted of ten, one-hour, transcribed audiotapes of individual L1 Spanish/L2 English NNSs of low level proficiency interacting with an English NS who was an ESL teacher experienced in talking to foreigners. The topics discussed varied considerably and included issues such as previous education, future plans, personal matters, friends, relatives, academic work, etc. Each one-hour transcript of NS/NNS interaction was coded by the researcher and random samples of the transcripts were coded independently by a trained coder.

The results showed that there were a total of 87 clarification requests, confirmation requests and repetitions of an NNS trouble-source (TS) utterance by the NS. 4 (or 5%) of these were ignored by the NNSs and 83 (or 95%) were negotiated. Of these 83 cases, 65 (78%) required only one (single) signal for their successful completion and 18 (22%) required extended negotiation. These figures are displayed in Table 4.1 overleaf:

Table 4.1: NS-NNS negotiated interactions (Adapted from Pica 1988)

Total No. of other-Initiations	Ignored		Negotiated					
87	n	%	Total		One-signal		Extended Negotiations	
			n	%	n	%	n	%
	4	5	83	95	65	78	18	22

In 16 cases (25%) of the 65 one-signal negotiated interactions, the NNSs only responded to the NS signal by repeating all or part of the TS utterance and in 49 case (75%) they responded with a modified version of their initial TS utterance. Of these 49 modified utterances, 15 (31%) were NS-based modifications (i.e., the NNSs' contribution consisted only of confirming the NS's modification of the TS utterance) and 34 (69%) were NNS-based modifications (i.e., cases in which the NNSs self-initiated the required adjustments). These figures are displayed in Table 4.2 below:

Table 4.2: Distribution of the one-signal modifications (Adapted from Pica 1988)

Total No. of single signals	Repetition of TS utterance		Modified Responses					
65			Total		NS-based adjustments		NNS-based adjustments	
	n	%	n	%	n	%	n	%
	16	25	49	75	15	31	34	69

As can be seen from Table 4.2, the 34 NNS-based adjustments constitute 69% of the 49 cases which, in turn, constitute the total number of modified responses. At the same time, the 34 NNS-based adjustments also constitute 52% of the 65 single-signal interactions.

These 34 NNS-based adjustments were further examined to ascertain whether modifications of individual morphosyntactic, phonological or semantic features contained target-like use of English. The results showed that 91% (or 31 cases) of these 34 NNS-based adjustments showed an approximation towards target-like use of English. These 31 cases constitute 48% of the 65 single-signal responses. This means that although NNSs successfully self-initiated adjustments in only 48% of the total number of the single-signal interactions, but when they did this, their modifications in most cases (91%) included target-like use of English.

The approximation towards target-like use of English took place through (a) addition, deletion or substitution of target grammatical morphemes and functors, (b) target-like changes in word order involving subject-verb inversion, verb-object ordering, and adjective and adverb placement, (c) addition, deletion or substitution of target phonological features, (d) addition or substitution of semantic content, and (e) translation of Spanish L1 into English L2. Most of these modifications were semantic (50%) and morphosyntactic (31%) with smaller percentages in phonology and L2 translation.

Briefly, the findings reveal that NNSs generated their own modifications of initial trigger utterances only 48% of the time, but when they did so, consistently (91%) they showed target-like use of English. Pica concludes that these results show that NNSs can modify their IL in response to a NS signal to achieve output which is both comprehensible and more target-like:

> "...more comprehensible because during 95% of the interactions in which the NS signaled comprehension difficulty, the NNS response to the signal led to a successful resolution; and more target-like because 48% of the NNSs' total number of responses to the NS signal were encoded, through their own initiation, in more target-like forms, a figure which represents 91% of the NNSs' self-initiated modifications" (Pica 1988: 59-60).

The conclusion drawn thus far represents one-signal negotiated interactions (78% of the total number of successfully negotiated NS/NNS interactions). These are interactions

in which the NS signals incomprehensibility and the NNS responds successfully. There are, however, cases (22%) in which the NNSs did not satisfy the NS's request for clarifications. When this occurred, the NS extended her incomprehension signal beyond the single signal-response exchange. Hence each of the 18 extended negotiated interactions (22% of the total number of initiations) included two NS signals and two NNS responses.

The results showed that the second NS signal provided even less of a stimulus for the NNSs to modify their utterances. They did so only 38% of the time. Otherwise, NNSs simply confirmed the second signal by saying *yes*, *right*, etc. and thus showed no or little modifications towards target-like L2 use.

Given the opportunity of making their IL comprehensible and target-like in response to NS signals, the finding that NNSs did not modify their utterances more often raised a new question for further analysis. Further explorations of the data showed that the NS was responsible for this. The NS's signals of comprehension difficulty may be classified under three categories: an explicit signal, a repetition signal and a modification signal. An explicit signal is a clear indication made by the NS indicating difficulty in understanding the NNS utterance, for example: *I don't understand you, I don't follow*. A repetition signal is an indication made by the NS asking the NNS to repeat what he/she (the NNS) has just said, for example:

NNS: Me the book the baby.
NS: Did you say the book the baby?
(from Pica 1988: 54, transcripts)

A modification signal is an indication of difficulty in understanding the NNS's utterance which the NS makes through requests for confirmation. In this case the NS normally modifies the initial utterance of the NNS producing what he/she (the NS) assumes the NNS wanted to convey, and then checking with the NNS whether this is the case or not. For example:

NNS: Me the book the baby.
NS: Did you say the baby's book?
(from Pica 1988: 54, transcripts)

Repetition signals, in accounting for NNSs' modifications 80% of the time they were used in negotiated interactions, seemed particularly influential in encouraging comprehensible and target-like output from the NNSs. Explicit signals accounted for 60% of modifications in this category, but were described as too open-ended to lead to NNSs' modifications. Modificational signals accounted for only 50% of modifications in this category. This might have been because, when they heard their original utterances in target-like forms, NNSs were little motivated to respond in any way other than by repeating or confirming the NS's modification. To have done so, would have been redundant. In Pica's words:

> "NS repetition signals, and to a somewhat lesser extent, explicit signals, seemed to provide the NNSs with a context for modifying their interlanguage to make it more comprehensible to the NS. These two kinds of signals appeared to invite the NNSs to bring new information into their discourse with the NS, whereas modification signals did this for them" (p. 66).

Therefore, although the NS's modified signals were influential in getting the NNSs to adjust their production towards target-like use, they were less efficient when compared to the other two signal-types.

The overall results of the study lend limited support to claims by Swain, Schachter and Hatch et al., among others that NS/NNS interactions (in which NS signals comprehension difficulty) were successfully negotiated in getting the NNSs to modify their IL towards comprehensible and target-like production. The results showed that NNSs were indeed capable of modifying their output in response to the NS's signal of comprehension difficulty and making it more target-like, yet such adjustments were relatively infrequent. It was found, instead, that the NS, during the course of the NNS's attempt to provide comprehensible output, produced many of the modifications required for the NNS who did not therefore have to modify his/her IL very often in response to the NS's signal of incomprehensibility. The data thus showed that NSs simplified the

accomplishment of output comprehensibility for the NNSs by modifying their IL for them. It was also found that NS signals had a major influence in giving (or depriving) NNSs of opportunities to modify their IL production. More specifically, by requesting confirmation, the NS is actually producing the required adjustments for the NNS which he/she (i.e., the NNS) needs only to confirm in most cases, whereas by requesting clarification, the NS is only signalling difficulty in understanding or hearing what the NNS was saying. It is only in the latter case that the production of self-adjusted comprehensible output is accomplished by the NNSs themselves. As such, the type of signal which the NS produced (explicit, repetition, or modification) determined to a large extent the nature of the NNSs' modifications and their degree of approximation of target-like production.

However, the study is not unproblematic. First of all, the data obtained were not specifically collected for the purpose of this study (see below). Second, it is rather difficult to draw any conclusion with confidence, since there is only one NS involved. The results of the study might derive not so much from the nature of conversational interactions but from the personal idiosyncratic style of the NS involved. Third, although the study was claimed to have been conducted to validate Swain's notion as to the various roles of comprehensible output, it did not show whether comprehensible output was used to test hypotheses about the TL, nor did it show whether it moved learners from a purely semantic analysis of the language to a syntactic analysis of it (since most modifications were NS-based). On the contrary, the study lends indirect support to Krashen's (1985) and Long's (1983d) claims that "comprehensible input from the NS is the major contributor to NNS output" (Pica 1988: 69). This, in effect, 'undermines' Swain's hypothesis that "comprehensible output is a necessary mechanism of acquisition independent of the role of comprehensible input" (Swain 1985: 252).

Moreover, as Pica herself acknowledges, due to the nature of the typical NS signal which normally contained an already modified version of the NNS utterance it could not be argued that successful NS/NNS negotiated interactions provided an optimal context for NNSs to gain experiences in modifying their output towards more native-

like production. What negotiated interactions appeared to offer to the NNSs was the opportunity to hear NS models of what their comprehensible output could sound like (especially in a situation like this where the NS is an experienced ESL teacher who was quite adept at figuring out what the NNSs were trying to say). Pica therefore speculates:

> "Had data been collected during classroom interaction, or with a NS unfamiliar with NNS production, or with participating subjects' awareness of the purpose of the study, perhaps results would have shown more of the NNSs' own modifications and less NS modeling of the L2 target" (Pica 1988: 69).

It still needs to be shown also which interactional patterns, those in which the NS's signal motivates NNS's output modification, or those in which the NS's signal models modifications for them, leads to successful second language acquisition. Pica warns that the results of this study "must remain tentative, to be altered, shaped, or discarded" in the light of future research (Pica 1988: 69).

In a more detailed and controlled study, Pica et al. (1989) transcribed and analyzed audiotapes of 10 adult NSs of Japanese, 5 males and 5 females, each interacting in English with one of ten female NSs of English in a non-instructional, experimental setting. The NNSs were of low-intermediate and mid-intermediate proficiency levels. The NSs had no teaching experience.

Pica et al. also sought to identify and describe Swain's (1985) comprehensible output by NNSs of English across three oral communication tasks. Specifically, the aims of the study were (a) to describe how L2 learners responded linguistically when NNSs signaled difficulty in comprehension, and (b) to compare types and frequencies of the learners' responses in relation to three different communication tasks. The three tasks examined were:

1. An information-gap task: In this task the NNSs drew their own original picture and then described it to the NSs, who had to reproduce it on the basis of the NNSs' description.

2. A jigsaw task: In this task both the NNSs and the NSs were required to produce an unseen sequence of pictures by exchanging their own uniquely held portions of the sequence.

3. A discussion: In this task the NNSs and the NSs shared their own views on the language-learning contributions of the other two communication tasks. This task was open-ended. Each task was carried out in 10 NS/NNS dyads. Alternate transcripts were coded and random samples of the transcripts were used to establish interrater reliability. This was significant at the level of p .05.

The results of the study showed that the information-gap task offered the largest percentage of opportunities for the NNSs to modify their output in response to NS signals of requests for clarification and confirmation. Chi-square analysis of NS signal frequency data showed that this result was significant (.05 for the three tasks together; .05 for information-gap vs jigsaw; and .05 for information-gap vs discussion). On the other hand, NS signals seeking clarification or confirmation of what the NNS had said constituted only 9% of the NS c-units on the jigsaw tasks and 11% of NS c-units during discussion. (c-units, or communication units, are utterances which include words, phrases, and sentences, both grammatical and ungrammatical, that provide referential or pragmatic meaning to NS/NNS interaction.) This finding did not support the prediction that, in carrying out the jigsaw task, NSs would provide NNSs with fewer opportunities for modifying the output than the information-gap task, but more opportunities than the discussion task. In fact there were no significant differences between the jigsaw and discussion tasks in the opportunities with which they provided the NNSs to modify their output.

The results also revealed that proportions of NS signals to their other productions were greatest on the information-gap task, less on the jigsaw task, and smallest during discussion. Significant differences were found across the three tasks and between the

information-gap and jigsaw, and information-gap and discussion tasks, significant in each case at the level of .05. On the other hand, for the dyads in which the NS was female and the NNS was male, proportions of NS signals requesting clarification or confirmation were also greatest on the information-gap task and slightly, but not significantly, lower on the discussion. On both tasks, the NSs used significantly higher percentages of signals compared with the jigsaw task.

The results of the study also showed that the tasks in which the participants took part did not have a significant influence on the type of signal used by the NS. Similarly, it was further found that the tasks in which the NNSs participated did not have a significant effect on their modification of their output. On the other hand, it was found that NNSs' modifications of their output were clearly influenced by the type of request signals used by the NSs. This implies that the type of NS signal of comprehension difficulty was more important to NNSs' modification of their output than the type of task in which they participated. Pica et al. conclude:

> "Task type was influential in the frequency with which opportunities to modify output were provided to NNSs by their NS interlocutors, but during actual performance of the task, NNS production of modified output was contingent solely on the type of signal used by the NS, and these signals, in turn, were equally available across all tasks" (p. 81).

This means that the quantity (frequency) of signals in the three tasks varied considerably, but the type of the signal itself (confirmation or clarification) is the same across all three tasks.

The study also revealed that morphosyntactic modifications were used frequently by the NNSs in addition to lexical substitutions and paraphrase, all of which were ways in which NNSs modified their output in response to NS signals for clarity and confirmation. This was particularly true with regard to the discussion task which seemed to encourage the kind of morphosyntactic modification which has been claimed by Swain (1985) to be an important benefit to the learner and the acquisition process. Although the overall results in this respect support Swain's hypothesis, a closer look at the results showed an effect for gender. Morphosyntactic modification was strongest

for NNS male/NS female dyads on the discussion compared with the other two tasks. For NNS female/NS female pairs, there was a minimal amount of linguistic modification on the discussion task. Thus, it seems that the males were largely responsible for the finding that the discussion task brought out significantly more structural modifications than the other two tasks.

The most likely explanation for the effect of gender on the discussion task is that it reflects an aspect of the nature of male/female interaction (Williams, personal communication). More specifically, sociological and sociolinguistic studies on sex, language and interaction show that in face-to-face cross-sex conversations, males tend to dominate the conversation and interrupt more frequently than females in both NS/NS interaction (West 1979, West and Zimmerman 1983, Zimmerman and West 1975) and NNS/NNS interaction (Gass and Varonis 1986). Since successful completion of the discussion task in Pica et al.'s study, unlike the information-gap and jigsaw tasks, does not require the supply of specific information from the speech partner and at the same time provides both parties with equal opportunities to participate, males tended to dominate the conversation and this, in turn, gave them greater chances to speak and make more morphosyntactic modifications to their output on this particular task than the other two tasks or NNS female/NNS female dyads. (For a similar finding and discussion, see Gass and Varonis 1986: 341-342.)

The overall results of the study revealed, therefore, that NS signal type had a significant impact on the type of response NNSs made to it regardless of task. Thus, across all tasks, NNSs tended to modify their output most often when NSs signaled **an explicit need for clarification** rather than provided a model utterance for confirmation. It was argued, therefore, that comprehensible output may be considered an important argument for SLA and that it was very much an outcome of linguistic demands placed on the NNS by the NS in the course of their negotiated interaction. It was also found that the information-gap task, more than the jigsaw or discussion tasks, provided better conditions for all NNSs, males and females, to modify their output to the NSs because it seemed to have provided the most consistently favourable context for NSs to signal

their need for clarity or confirmation and for NNSs to respond with modified output. The jigsaw task offered a less favourable context for NS clarification requests and NNS modified output responses. The discussion task offered the greatest percentages of NS clarification requests, NNS output modification responses in general, and NNS syntactic modification in particular, although the first two of these three results were not at a significant level (Pica et al. 1989: 83-84).

In sum, Pica et al. argue that the general results of the study provided empirical validation for Swain's (1985) construct of the comprehensible output hypothesis as well as the claims about NNSs' IL modification in the direction of native-like production by, for example, Hatch et al. (1986) and Brock et al. (1986). They also revealed the extent to which the production of comprehensible output by NNSs was influenced partly by the type of linguistic demands (confirmation requests or clarification requests) made by means of NS signals of comprehension difficulty and partly by the nature of the specific communication task.

The results of the study are inconclusive, nevertheless (See below). For instance, Pica et al. acknowledged that it was unclear whether the results appeared as they did due to the gender distinction within the dyads (i.e., male to female vs female to female) or to gender differences between NNS males and NNS females. Also because all NNSs were native speakers of Japanese, it was impossible to determine whether the results were influenced by the interaction of gender and ethnicity (Pica et al. 1989: 84).

4.3 Summary and Conclusions

In this Chapter, the literature which relates to L2 learners' performance ability including the production of comprehensible output and their potential significance in SLA was reported. Several SLA researchers (including Celce-Murcia 1983, McLaughlin 1987, Pica 1987) have suggested that more attention should be paid to L2 learners' production. Others (such as Swain 1985) theorized that the role of learner production

is independent in many ways of that of his/her comprehension. Swain proposed a hypothesis relating to L2 learner's production comparable to that of comprehensible input. This she termed "the comprehensible output hypothesis" for SLA, which states that the role of comprehensible output at minimum is to provide opportunities for contextualized, meaningful use, to test hypotheses about the TL, and to move the learner from a purely semantic analysis of the language to a syntactic analysis of it (p. 249). Related to this issue is the hypothesis that when NSs indicate difficulty in understanding NNSs, the latter would respond by modifying their IL morphosyntax, phonology, and lexical choice and, in doing so, would employ more native-like use of the TL (Swain 1985, Hatch et al. 1986, Sato 1986 and Brock et al. 1986).

Previous empirical findings show that the type of signal which NSs give provides (or fails to provide) NNSs with the opportunities for modifying their output to make it comprehensible (Pica 1988, Pica et al. 1989). Hence, clarification requests, unlike confirmation requests, are signals which require NNSs to produce comprehensible output because by signaling difficulty in understanding the NS is inviting the NNS to produce a new output which is more comprehensible than the previous one. Research findings also show that **negotiated interaction** is of particular value because it provides frequent opportunities for clarification requests which are important to production (or comprehensible output) as well as confirmation requests which are important to comprehension (or comprehensible input) (Pica et al. 1989: 84). This is because clarification requests make the speaker repair by producing a new output which is more comprehensible than the first one, while inviting the speaker to confirm that a particular meaning is intended will promote comprehensible input in the speaker.

Further, empirical research shows that a greater amount of negotiation takes place in NNS/NNS interaction than in either NS/NNS or NS/NS interaction (Gass and Varonis 1985a,b and Varonis and Gass 1985a,b). Therefore, it has been suggested that NNS/NNS interactions provide better contexts for NNSs to negotiate the meaning and the form of the message in the direction of comprehensible input. One needs to establish whether NNSs modify their output towards native-like production when

interacting with other NNSs in ways that are significantly different from (or similar to) those that occur in NS/NNS interaction or whether their modifications to other NNSs are more systematic but less native-like than when their interlocutors are NSs.

Empirical studies (e.g., Pica et al. 1989) have also revealed that there is a difference between female NSs/female NNSs on the one hand and female NSs/male NNSs on the other, such that in the latter case more opportunities for modifications are provided for native-like production on certain tasks (e.g., the discussion task) but not others (e.g., picture-dictation and jigsaw tasks). Since Pica et al.'s study dealt only with Japanese-speaking NNS informants, it is impossible to determine whether such differences are due to gender or ethnicity, or both. Therefore, one might still want to know whether this finding holds true for different speakers with different L1 backgrounds. For instance, one might ask: Do female NNSs provide male NNSs with opportunities for native-like productions as frequently as those observed in female NSs/male NNSs in Pica et al.'s study on the discussion task? Would the modifications be just the same when both NNSs are males? That is, would they provide each other with comparable opportunities for native-like production as those described in Pica et al.'s study?

With the exception of Pica (1988) and Pica et al. (1989), empirical research has been comparatively rare. It is difficult to come to any firm conclusion on the basis of the limited research that has been conducted to date and has investigated NNSs' ability to produce comprehensible output. Further, the findings of the studies lend only limited support to the theoretical positions which initially motivated investigating NNSs' production of comprehensible output. The results are, therefore, inconclusive and the area under investigation is in need of further empirical validation.

On the other hand, neither of the two empirical studies reviewed above examined NNSs' production of comprehensible output in a NNS/NNS context, itself an important context for the negotiation of meaning as demonstrated by Varonis and Gass (1985b). This is important because one wants to know whether NNSs make the same modifications with other NNSs to their IL phonology, morphosyntax and lexis when

they make themselves understood to NSs, or whether they make such modifications in a systematic but less comprehensible way. Also one wants to know whether NNSs make their output comprehensible regardless of gender and/or ethnicity, age, proficiency level and task, or whether modifications of output are bound by (any of) these variables.

Also, group discussion is a common talk-type which has implications with regard to group/pair work in the second/foreign language teaching classroom. The value of group discussion has so far been investigated for its effectiveness for the provision of comprehensible input (Long 1975, Long and Porter 1985, Pica and Doughty 1985, Doughty and Pica 1986), but not as a context for the production of comprehensible output. It is important to investigate its influence on L2 learners' production of comprehensible output. The present study will, therefore, examine both the role of pair encounters and group interaction in L2 learners' production of modified comprehensible output.

Finally, and most importantly, there are occasions when NNSs modify their IL phonology, morphosyntax and lexical choice to make them more comprehensible when they realize that their current or previous utterance is insufficient as a means for communicating the intended message. These are normally referred to as self-initiated self-completed repairs (Schegloff et al. 1977, Kasper 1985). As demonstrated by Schegloff et al. (1977), Kasper (1985) and others (See Ch 3.2), self-initiated self-completed repairs (or modifications) are much more frequent in conversations than other-initiated other completed or other-initiated self-completed repairs. Neither of the empirical studies which has investigated L2 learners' production of comprehensible output has taken learners' self-initiated clarification attempts and self-initiated modified comprehensible output into consideration. The present study will investigate the occurrence of both **other-initiated clarification requests** and **self-initiated clarification attempts** in relation to the NNSs' production of modified comprehensible output. For this reason, there will be a distinction between clarifications initiated by the interlocutor (here called other-initiated clarifications) and clarifications initiated by the NNS himself/herself (here called self-initiated clarifications).

4.4 Research Hypotheses for the Present Study

On the basis of the objectives of the study delineated in the introductory Chapter and on the basis of the theoretical positions and the preliminary empirical findings reviewed in this Chapter, the following hypotheses will be the basis for this study:

Hypothesis 1:

Other-initiated clarification requests (including explicit statements of non-understanding and requests for explanation, expansion, paraphrase and elaboration) are signals which require NNSs to modify their interlanguage (IL) phonology, morphosyntax and lexis, thereby producing comprehensible output in both NS/NNS and NNS/NNS dyadic and group encounters.

Hypothesis 2:

Self-initiated clarification attempts by NNSs exhibit modifications of IL phonology, morphosyntax and lexis and thereby result in comprehensible output in both NS/NNS and NNS/NNS dyadic and group encounters.

Hypothesis 3:

The frequency of utterances exhibiting modification in NNS IL phonology, morphosyntax and lexis as the result of self-initiated clarification attempts will be greater than those which come as the result of other-initiated clarification requests, specifically:

(a) There will be greater frequency of self-initiated clarification attempts, and

(b) There will be greater frequency of modified comprehensible output (MCO) as the result of self-initiated clarification attempts than of other-initiated clarification requests.

Hypothesis 4:

NNS/NNS interactions provide more opportunities for modification towards comprehensible output than NS/NNS interactions, specifically:

(a) They provide a greater proportion of other-initiated clarification requests;

(b) They result in a greater proportion of self-initiated clarification attempts;
(c) There will be a greater proportion of NNS modification of IL phonology, morphosyntax and lexis in the direction of comprehensible output.

Hypothesis 5:

Opportunities for the production of utterances exhibiting modification in NNS IL phonology, morphosyntax and lexis as a result of self- and other-initiations would be greater on the picture-dictation task than on the opinion-exchange task in both NS/NNS and NNS/NNS encounters, specifically:
(a) There will be greater frequency of initiations, and
(b) There will be greater opportunities for MCO production on the picture-dictation task than on the opinion-exchange task.

Hypothesis 6:

The conversion rate between initiation (self- and other-) and utterances exhibiting modification in NNS IL phonology, morphosyntax and lexis will be higher in encounters between groups of NNSs than in dyadic encounters.

The following Chapter will present the methodology followed in designing the present investigation, including choice of subjects, choice of communication tasks, data collection procedures and methods adopted in transcribing the data.

Chapter Five

The Study

(methodology)

This Chapter presents the research methodology which has been followed to investigate second language (L2) learners' production of modified comprehensible output. The Chapter consists of the following four sections: choice of subjects, choice of communication tasks, data collection procedures and transcription techniques.

5.1 Subjects

In selecting the sample, the present researcher attempted to replicate the conditions of previous studies which involve adult NNSs of both sexes representing more than one L1 background and at a comparable level of proficiency (e.g., Taylor 1975, Larsen-Freeman, 1985b, Gass and Varonis 1986, Holliday 1988, Pica et al. 1989). Although the researcher was keen to get equal numbers of males and females, it was beyond his control to do so, because he was bound by the availability of the right sample at the time of the experiment. Nevertheless, it was possible to hold the gender constant (i.e., male/male and female/female) over all pairs. For these reasons, 35 adults, ranging in age from 22 to 37 years were selected. There were 8 native speakers (NSs) (4 males and 4 females) and 27 non-native speakers (NNSs) of English (12 males and 15 females). Most of NNS informants were acquainted as ESL classmates on the same course. Of the 8 NSs, six (3 males and 3 females) spoke British English, one male spoke Irish English and one female spoke South African English. The NNSs represent 13 L1 backgrounds. These included Afrikaans, Arabic, Bengali, Cantonese, French, Greek, Italian, Korean, Mandarin, Farsi, Portuguese, Serbo-Croat and Spanish. Table 5.1 displays the distribution of all informants in relation to L1, country of origin, sex,

type, and the task(s) each informant performed. And Table 5.2 shows the distribution of NNS informants in terms of the number of participants (males and females) with regard to each mother tongue background.

Table 5.1: The Population of the study

Code No.	Name	L1	Country	Sex	Type	Tasks Performed
1	Karen	Cantonese	H. Kong	f	NNS	1&2
2	Salma	Arabic	Somalia	f	NNS	1,2&3
3	Khady	French	France	f	NNS	1&2
4	Limin	Mandarin	China	f	NNS	1&2
5	Nikos	Greek	Greece	m	NNS	1&2
6	Tam	Cantonese	H. Kong	m	NNS	1&2
7	Hugo	Spanish	Uruguay	m	NNS	1&2
8	Ahmed	Arabic	Somalia	m	NNS	1,2&3
9	Sarah	English	U.K.	f	NS	1&2
10	Margaret	English	U.K.	f	NS	1&2
11	Bronwen	English	U.K.	f	NS	1&2
12	Ingrid	English	S. Africa	f	NS	1&2
13	Philip	English	U.K.	m	NS	1&2
14	David	English	U.K.	m	NS	1&2
15	Jon	English	U.K.	m	NS	1&2
16	Liam	English	Ireland	m	NS	1&2
17	Teresa	Portuguese	Brazil	f	NNS	1&2
18	Parveen	Bengali	Bangladesh	f	NNS	1&2
19	Ada	Cantonese	H. Kong	f	NNS	1&2
20	Ksenia	Serbo-Croat	Yugoslavia	f	NNS	1,2&3
21	Clemencia	Spanish	Colombia	f	NNS	1,2&3
22	Willem	Afrikaans	Namibia	m	NNS	1,2&3
23	Hu	Mandarin	China	m	NNS	1,2&3
24	Basim	Arabic	Syria	m	NNS	1&2
25	Asisa	Persian	Iran	f	NNS	1&2
26	Yazna	Serbo-Croat	Yugoslavia	f	NNS	1&2
27	Maria	Italian	Italy	f	NNS	1&2
28	Min	Mandarin	China	f	NNS	1&2
29	Berthe	Afrikaans	Somalia	f	NNS	1,2&3
30	Flevio	Portuguese	Brazil	m	NNS	1&2
31	Sum	Cantonese	H. Kong	m	NNS	1,2&3
32	Riad	Arabic	Syria	m	NNS	1&2
33	Luis	Spanish	Colombia	m	NNS	3
34	Constanza	Spanish	Colombia	f	NNS	3
35	Han	Korean	S. Korea	m	NNS	3

Task Codes:
1= Picture-dictation task
2= Opinion-exchange task
3= Group decision-making task

Table 5.2: The distribution of NNS informants by mother tongue

Mother Tongue	Total Number of participants	Sex	
		Male	Female
Afrikaans	2	1	1
Arabic	4	3	1
Bengali	1	-	1
Cantonese	4	2	2
French	1	-	1
Greek	1	1	-
Italian	1	-	1
Korean	1	1	-
Mandarin	3	1	2
Persian	1	-	1
Portuguese	2	1	1
Serbo-Croat	2	-	2
Spanish	4	2	2
Total	**27**	**12**	**15**

The length of the NNSs' residence in the U.K. at the start of the investigation ranged between two to three months. All NNS subjects were enrolled in a communicatively-oriented EAP (English for Academic Purposes) programme at the Language Centre in the University of Newcastle upon Tyne and were receiving 2-4 hours of instruction weekly. The course was running simultaneously with their respective postgraduate studies in the various departments of the University. At the time of the investigation,

the programme had 3 levels of instruction, ranging from a beginning course, level 1, to a course for advanced students, level 3. The 25 NNS students were enrolled in level 2, the intermediate to higher-intermediate ESL class levels. Students' placement was determined by their scores on the English Proficiency Test Battery (EPTB), designed by A. Davies and C. Alderson. Students' scores ranging from 36 to 45. The EAP programme was aimed at developing skills in both conversational and written English.

It is worth mentioning that measuring the proficiency levels of NNS informants is important since some SLA researchers (e.g., Taylor 1975, Larsen-Freeman 1975) have shown that factors affecting the SLA process vary in the degree to which they apply depending upon the proficiency level of subjects. Therefore choosing subjects with comparable levels of second language proficiency makes the findings more consistent and this adds to the reliability and validity of the results of the study. At the same time, knowledge of the proficiency levels of subjects enables the researcher to choose task materials appropriate to the level of the subjects (Larsen-Freeman 1985b).

Following previous studies by Holliday (1988), Pica (1988) and Pica et al. (1989), it was important to obtain a sample of NSs who spoke standard English. These researchers also argue against selecting NSs who have taught or had extensive dealings with NNS. Pica et al. (1989) and Holliday (personal communication), for instance, argued that the NNSs made less efforts to make themselves understood when interacting with ESL teachers and relied heavily on their native English teachers to understand them. However, this study slightly departs from previous studies in its choice of the NSs. Although the NSs of English were all associated with a University community and spoke standard English, they had varying degrees of experience with NNSs. One of the 8 NSs participating in this study was a full time teacher in the Language Centre, two were M.A. students in Linguistics and part-time teachers in the Centre. The other five NSs were also University postgraduate students from another University (the University of Durham). These were one Ph.D. student in 17th Century English language studies with no formal teaching experience, one M.A. graduate in Applied Linguistics with two years of TESL experience, one M.A. student in Applied Linguistics with one

year of TEFL teaching experience, one M.Sc. student in Computer Sciences and one Ph.D. student also in Computer Sciences, both of whom had no formal teaching experience. These five NSs, unlike the first three, were not known to the NNSs before the experiment was conducted.

5.2 Communication Tasks

5.2.1 Task selection and design

Lynch (1988) argues that the selection of "task-focused" discourse in which both the NS and the NNS are actively engaged in a real and concrete task rather than merely listening to each other in a passive way is essential for the purpose of collecting data as well as for use in the second/foreign language classroom. He also points out that NS/NNS interaction research has shown that

> "...conversations with a tangible outcome are more likely to result in an increased degree of linguistic and conversational adjustment than those with no clear concrete goal, since they require active two-way negotiation of meaning" (Lynch 1988: 322).

Bialystok (1983: 103) summarizes the criteria and features of a communication task along the following lines: a communication task must (i) stimulate real communicative exchange, (ii) provide incentive for the L2 speaker/learner to convey information, (iii) provide control for the information items required for investigation and (iv) fulfil the needs to be used for the goals of the experiment. In fact these are the criteria which most SLA researchers take into account when they construct tasks. For instance, Pica (personal communication) argues that tasks should be developed in such as way to "meet criteria for information control, information flow and goals of the study".

Some SLA researchers (e.g., Larsen-Freeman 1985b: 127) have also pointed out that in selecting communication tasks, it is important to make the linguistic features of the language (phonological, syntactic, pragmatic, etc), medium (phonic, graphic), skills

(listening, reading, writing, speaking, translating, imitating) and format of the tasks consistent with the objectives of the study.

With all this in mind, the following three communication tasks were selected and developed for the purpose of the present study: a **picture-dictation** (information-gap) task, an **opinion-exchange** task and a **decision-making** (consensus-reaching) task. The selection of the three tasks was motivated in the first place by previous studies such as Long (1980), Hawkins (1985), Gass and Varonis (1985a), Doughty and Pica (1986), Crookes and Rulon (1988), Rulon and McCreary (1986), Duff (1986), Pica et al. (1987) and in particular by Pica et al.'s (1989: 72) remark that

> "there is a great deal of consensus regarding the value of these tasks in providing data on interaction in general and negotiated interaction in particular."[1]

And as Pica et al. (1989: 84) also point out that negotiated interaction is an important source of research data because it helps "to identify ways in which learners and their interlocutors work together in producing comprehensible input and comprehensible output", it is possible to conclude with confidence that the three tasks selected for the purpose of the present study are suitable for investigating NNSs' production of MCO. Moreover, these three tasks were specifically selected because they give the interactants different degrees of control over the information needed for their successful completion and because of the number of different possible resolutions or outcomes (see also Table 5.3 below).

Other factors relevant in the selection and the design of the three tasks employed will be discussed later in this section.

Pica, Kanagy and Falodun (undated) identify 5 main types of communication tasks used in L2 research and pedagogy: jigsaw, information-gap (picture-dictation), problem-solving, decision-making and opinion-exchange. Task types are often characterized in the literature in terms of the following categories: *one-way* vs *two-way* (Long 1981, Gass and Varonis 1985a), *optional* exchange of information type vs *required* exchange

of information type (Doughty and Pica 1986, Pica et al. 1989), *convergent* vs *divergent* (Duff 1986). The following Table displays a classification of the main communication tasks used in L2 research and pedagogy:

Table 5.3: Interactant roles, relationships and requirements in communicating information (INF) to achieve task goals (from Pica, Kanagy and Falodun (undated))

Communication Task Type	INF holder	INF requester	INF supplier	INF requester-to-supplier relationship	interaction requirement goals	goal orientation	task outcome possibilities
jigsaw	X + Y	X + Y	X + Y	2 way (X to Y & Y to X)	+required	+convergent	1
picture-dictation	X or Y	Y or X	X or Y	1 way= (X to Y *or* Y to X)	+required	+convergent	1
problem-solving	X ≈ Y	X = Y	X = Y	2 way (X to Y & Y to X)	-required	+convergent	1
decision-making	X = Y	X = Y	X = Y	2 way (X to Y & Y to X)	-required	+convergent	1 +
opinion-exchange	X = Y	X = Y	X = Y	2 way (X to Y & Y to X)	-required	-convergent	1 -

It is beyond the scope of the present study to discuss these task-types. However, they will be relevant insofar as they have in part motivated the selection of the three tasks employed in this study.

The Table shows that there are significant differences between the three tasks employed in the present study in relation to the information necessary (+ required vs - required) for task completion and/or the numbers of task outcome possibilities (1, 1+, 1-). The Table also shows that there are differences with respect to the directional flow (1 way vs 2 way), goal orientation (+ convergent vs - convergent) and who holds, requests and conveys the information necessary to carry out the task. In the light of these differences, the three tasks are likely to place a range of communication demands on the participants.

The picture-dictation task.

In this one-way task, one interactant holds all the information and supplies it in response to the other's request. (Gass and Varonis (1985a: 153), who followed a similar procedure, noted that this form of picture-dictation "is not exclusively one-way, as a lecture would be, but information flows *primarily* in one direction.") Picture-dictation is classified as a convergent task since the participants have shared goals to reach mutually acceptable outcomes (Duff 1986: 150). In the present study, each NNS had to describe the contents of a postcard to a NS or to a NNS partner who had to reproduce the picture as precisely as possible solely on the basis of the NNS's description (see section 5.3.1.1 below). This means that successful completion of the task depends in the first place on the NNS's ability to supply a clear and accurate description of the picture he/she holds.

The opinion-exchange task.

In this task, unlike the picture-dictation task, each interactant has access to all the information and supplies it in response to the other's request. Each interactant is expected to request and supply information, but is not required to do so. Opinion-exchange tasks are divergent in that it is not necessary for the interactants to reach any agreement. Interactants have the right to refute their partners' arguments with as many arguments as possible, should they wished to do so (Duff 1986: 150). The opinion-exchange task employed in the present study was a discussion in which the interactants were required to exchange opinions about a short newspaper article (see section 5.3.1.2 below). The task was open-ended and did not require any of the speech partners to use only the precise information available to them or adhere to any specific aspect of the theme of the article.

The decision-making task.

As was in the case of the opinion-exchange task, in this task each interactant has access to all the information and supplies it in response to the request of others. However, unlike the opinion-exchange task, here each informant is required to request and supply information because only unanimous decisions must be reached. Also unlike the

opinion-exchange task, this is a convergent task since mutually acceptable decisions must be reached. Although the decision-making task and the opinion-exchange task are similar with regard to information holder, information requester, information supplier, the information requester-to-supplier relationship and the interaction requirements, their goal orientations (+ convergent vs - convergent) and the outcome possibilities (1+ vs 1-) differ substantially. In the present study, interactants have to make decisions and reach unanimity with regard to every decision they make (see section 5.3.2 below).

From informal discussions with many language teachers, the researcher found that decision-making tasks were undertaken as a group activity in most classrooms. Opinion-exchange tasks were sometimes administered as group tasks but were more often attempted in dyadic. The form of picture-dictation adopted for this investigation, unlike other forms such as those described in Brown and Yule 1983: 111-112, was always set as a dyadic task. This classroom pattern is also replicated in several other studies on the negotiation of meaning, comprehensible input, comprehensible output, pair and group interaction (e.g., Long 1975, Long 1980, Long and Porter 1985, Hawkins 1985, Duff 1986, Rulon and McCreary 1986, Crookes and Rulon 1988, Gass and Varonis 1986, Varonis and Gass 1985b, Pica and Doughty 1985, Pica 1988, Pica et al. 1987, Pica et al. 1989). For these reasons, it was decided that the picture-dictation and the opinion-exchange tasks would be performed in dyads and the decision-making task in groups.

There are also additional reasons for this particular distribution and design of encounters.

(i) With regard to picture-dictation tasks, it is inconceivable to have many-to-many picture-dictations, although it is possible to have one-to-many (see Brown and Yule 1983: 111-112). However, the one-to-many picture-dictation task design typically results in one learner describing/speaking while the rest merely listen and this is not conducive to clarification requests. Moreover, in the one-to-many model, the design favours teacher control rather than teacher as partner. Since L2 researchers typically advocate the use of what Duff (1986: 149) calls "teacherless tasks" rather than tasks which

involve a greater degree of teacher involvement, the design of this task in pairs gives the interactants more opportunities to negotiate meanings without external (i.e., teacher) interference.

(ii) In an opinion-exchange task amongst a group, an individual is not required to contribute. Therefore a one-to-one opinion-exchange activity in which both interactants must contribute to the conversation is preferred over one-to-many situations in which a particular individual may avoid making any contribution.

(iii) At the same time, the design of these two tasks in pairs allows a direct comparison with previous studies of NNSs' production of MCO which employed similar tasks and followed similar procedures, namely Pica (1988) and in particular Pica et al. (1989), as well as indirect comparison with studies which looked at comprehensible input (e.g., Varonis and Gass 1985b, Gass and Varonis 1986).

(iv) In the decision-making task, there is a greater requirement placed on the interactant to contribute to the interaction. Since there is a requirement to reach unanimity, every interactant ought to be contributing. However, although this task could be performed in dyads, there are several reasons for it to be performed in groups of NNSs. First, to allow a direct comparison between dyadic tasks and this one in terms of the conversion rate between initiation occurrences of repair/clarification and successful production of MCO. Second, group discussion is a common talk-type and therefore it will be important to examine its effect on NNSs' production of MCO. And third, to allow indirect comparison with other studies which looked at pair and group interaction in relation to their provision of comprehensible input (e.g., Long and Porter 1985, Pica and Doughty 1985, Doughty and Pica 1986).

5.2.2 Predictions

Based on the differences between the tasks discussed above, a number of predictions about NNSs' production of MCO in relation to the effect of task type were made.

A first set of predictions relates to dyadic encounters. The researcher predicted that interlocutors would produce more indications of unacceptable input when the conversation was focused on a one-way as compared to two-way flow of information. That is to say, the picture-dictation task would result in a greater number of other-initiated clarification requests than the opinion-exchange task because successful completion of the former required that the NS or NNS partner would request precise and accurate information. The researcher also predicted that trouble-source originators would make more self-initiated clarification attempts when the conversation was focused on a one-way as compared to a two-way flow of information. In other words, the picture-dictation would also result in a greater number of self-initiated clarification attempts than the opinion-exchange task, again because the NNS with the picture knows that he/she holds all the information and therefore accurate, precise and comprehensible output is required for its successful completion. Based on these two prediction, it was further predicted that the picture-dictation task would give NNSs greater opportunities to modify their production in the direction of MCO than the opinion-exchange task since they held all the information about the picture their NS or NNS speech partners were required to draw. And a final prediction in this category was that there would be a greater number of extended negotiated routines (two or more signals) on the picture-dictation task than the opinion-exchange task. That is to say, it was believed that in order to convey the information accurately, precisely and comprehensibly, the NNS with the picture would have to adjust the form and the content of his/her utterances until they were unambiguously comprehended by the speech partner who is required to reproduce the picture. These predictions were the basis of hypothesis 5.

A second set of predictions relates to the differential effects of group decision-making and dyadic information exchange on the NNSs' production of MCO. The researcher predicted that in a group of 5 NNSs with different MT backgrounds, for instance, each informant was likely to have fewer speaking opportunities than in a dyadic encounter. Nevertheless, it was also predicted that an interactant was likely to be more keen to make himself/herself understood in response to other and self-initiation in group interactions than in dyadic ones for socio-psychological and set up reasons. For

instance, group interaction constitutes a challenge to the participant to be *understood* by *all* parties involved in the conversation or the decision-making task. Under such circumstances, an interactant is more likely to try to be as comprehensible as possible in group interactions than in dyadic ones, and in particular in response to other-initiated clarification requests and self-initiated clarification attempts. For the same reasons, it was further predicted that there would be proportionately more extended negotiated interactions/routines in the direction of producing MCO in the group task than in the dyadic tasks. In other words, in adjusting his/her production in response to other and self-initiation, the NNS interactant would have to make his/her utterances understood by all parties involved in the decision-making process which would be likely to lead to a greater number of extended routines for the production of MCO. These predictions were the basis of hypothesis 6.

5.3 Data Collection Procedures

For the rationales specified in the preceding section, the picture-dictation (information-gap) and the opinion-exchange tasks were performed in dyads and the decision-making task in groups. The first two tasks were audio-taped, and the group decision-making task was video-taped. The data were collected in three sessions over a 3-month period. In the first session (29 Nov. 1989), there were 10 dyads. Each dyad performed the first and second tasks. In the second session (19 Feb. 1990), 6 new dyads performed the same two tasks as had been performed by the 10 dyads earlier. The total number of audio-recordings is 32 therefore. In the third session (5 March 1990) the decision-making task was conducted. Of the 11 NNS informants who participated in this task, 8 had already participated in performing the first two tasks in the second session, while 3 had not.

At the time the NNS informants participated in the first session, they had been in the U.K. for a period of approximately two months, i.e., since the beginning of the

academic year. During this period they were also following an EAP course, as were the NNS informants who participated in the second and third sessions.

Some researcher point out that it is important for the participants to acquire a good conceptual grasp of the cognitive content, structure and the goal of the task to be able to complete it successfully because a clear understanding of these aspects including what is required to do enhances their ability to communicate successfully (Brown and Yule 1983, Brown 1989). In other words, knowledge of the cognitive content of the task (or lack of it) is an important feature which may play a role in facilitating or hindering the ability to comprehend or produce the TL with confidence. Brown, for example, states:

> "If we want students to have an opportunity of exploiting and developing their language capacity to the full, we need first to ensure that they thoroughly understand the task structure within which they are expected to do this. Otherwise we may be assessing and diagnosing problems in language production which are not problems in language production at all, but are actually problems in identifying the structure and requirements of the task" (Brown 1989: 106).

With this in mind, and following Holliday (1988), Pica et al. (1989) and other SLA researchers who have drawn attention to the need for instructions to be both oral and written, prior to each activity, each informant was given a copy of the task involved and a written set of instructions, as well as an oral explanation of the procedure.

5.3.1 Dyadic interaction tasks

As mentioned earlier, the picture dictation and the opinion exchange tasks were performed in pairs. Each pair was either NS/NNS or NNS/NNS. Each pair performed the picture-dictation task first and then the opinion-exchange task. All interactions were tape-recorded. The researcher and his three research-assistants ensured that all pairs were comfortable and relaxed and that tape-recorders were switched on. All data were collected with the tape-recorder in full view of the participants. All interactions took place in University classrooms. NNSs whose partners were one of the five NSs who

came from the other University and were not known to each other were introduced by their first names. Each dyad was allocated a separate room. Once the activity started, participants were left alone in the room with the door closed until they decided that their task had been completed.

5.3.1.1 Picture-dictation task

The choice of material for this activity was motivated by research done by Long (1980), Gass and Varonis (1985a) and Pica et al. (1989), where the NNS describes a picture/postcard to the NS. The procedure for this task draws on Gass and Varonis's (1985a) procedure in that a NNS was given a picture (a postcard in our case) to describe to a NS or a fellow NNS. The postcard itself was carefully selected as having clear, easily recognizable features describable in a simple vocabulary in order to enable the NNS to understand its content and describe this to his/her partner (See Appendix 1). Original colour copies of the same postcard were distributed to all NNSs whose role was to describe the picture to their task partners. In addition to the oral explanation, each NNS speech partner with the picture was given the following written set of instructions and guidelines:

(1) Ask B to sit with his/her back turned away from you,
(Following the well-established principle that sitting back-to-back is believed to be more appropriate for this kind of activity because this creates a situation whereby the NNS with the picture has more opportunities to describe its content verbally with less interference by the addressee (Pica & Holliday, personal communications)). (See also Gass and Varonis 1985a, for a similar procedure)

(2) B must draw the picture you have only by listening to you describe it,

(3) Do not let B see your picture,

(4) Let B ask as many questions as he/she wants,

(5) You can take as much time as you like to explain the picture to B. You will probably need 8-10 minutes to do so.

The NS or NNS partners to whom the pictures were to be described were also given the following written set of instructions and guidelines:

(1) Take a pen/pencil and a sheet of paper,
(2) Sit with your back to A,
(3) Copy A's picture only by listening to him/her describe it,
(4) Look only at your paper. Do not look at the picture A is describing to you,
(5) You may ask as many questions as you want about the picture,
(6) You can take as much time as you like to draw the picture. You will probably need 8-10 minutes to do so.

After every pair had completed the first activity, all informants reassembled in the meeting room (in the Centre itself) in preparation for the second activity. All drawings, postcards and recordings were handed in to the researcher or one of his assistants to be labelled with a subject code number.

5.3.1.2 Opinion-exchange task

The design of this activity was also influenced by the practice established by several SLA researchers (e.g., Duff 1986, Rulon and McCreary 1986, Pica et al. 1989) in which NNSs exchange opinions with NSs or fellow NNSs. For this reason, a copy of a controversial and stimulating newspaper article entitled Chauvinist Husband Divorced was photocopied and distributed to every subject (See appendix 2). It is worth mentioning that this particular text was carefully selected to match the proficiency level of the NNS informants. Criteria such as the length of the text (200 to 250 words), length of the sentence, complexity of content and familiarity with vocabulary were all taken into consideration.

It is generally agreed that in order for such activity to be performed successfully, the article needs to be simplified first, if necessary, in oral explanation and then in writing. The underlying rationales are that this avoids metalinguistic considerations taking up

discussion time and enables all participants to get a fairly equal understanding of the theme of the article. Brown and Yule (1983: 34) and Brown (1989) point out that such considerations are important requirements for successful completion of the task. Therefore, the researcher explained the content of the article and simplified it with regard to its vocabulary and controversial arguments until it was fully understood by everyone. All queries and questions were answered. As in the case of other studies (e.g., Duff 1986), informants were given 5 minutes additional reading time to formulate their views, opinions, arguments, etc. The same dyadic partners left for their respective rooms to perform the second task. In addition to the comprehensive oral explanation, the following written set of instructions and guidelines were also distributed to every subject:

(1) Read the following simple article until you understand it fully (perhaps you need to read it once or twice),

(2) Sit face-to-face with your partner,

(3) Have a ten-minute conversation in which you exchange opinions with your partner about the theme of the article. You can discuss, for instance, whether the husband was justified in his jealousy of his wife or whether the wife herself was not actually treated fairly by her husband, whether the judge was justified or not in granting the wife a divorce, and so on and so forth.

Dyadic distribution of informants over the picture-dictation and the opinion-exchange tasks was as follows: 4 were female NNS/female NS pairs, 4 were male NNS/male NS pairs, 5 were female NNS/female NNS pairs, and 3 were male NNS/male NNS pairs.[2] Table 5.4 below displays the distribution of the 16 pairs who performed the picture-dictation and the opinion-exchange tasks:

Table 5.4: Distribution of dyads who performed the picture-dictation and the opinion-exchange tasks

Code Number	Sex	Type	Versus	Code Number	Sex	Type
1	f	NNS	vs	9	f	NS
2	f	NNS	vs	10	f	NS
3	f	NNS	vs	11	f	NS
4	f	NNS	vs	12	f	NS
5	m	NNS	vs	13	m	NS
6	m	NNS	vs	14	m	NS
7	m	NNS	vs	15	m	NS
8	m	NNS	vs	16	m	NS
17	f	NNS	vs	25	f	NNS
18	f	NNS	vs	26	f	NNS
19	f	NNS	vs	27	f	NNS
20	f	NNS	vs	28	f	NNS
21	f	NNS	vs	29	f	NNS
22	m	NNS	vs	30	m	NNS
23	m	NNS	vs	31	m	NNS
24	m	NNS	vs	32	m	NNS

N.B.: With regard to the picture-dictation task, informants listed in the first column described the picture while informants listed in the second column attempted to draw it.

5.3.2 Group decision-making task

This activity is a departure from previous research which had looked at NNSs' production of modified comprehensible output. It was designed to investigate the opportunities for NNSs' production of modified comprehensible output in a group discussion, since this is a common talk-type. It was in part motivated by the research into the role of interaction and the negotiation of meaning in dyadic and small group encounters conducted by Long and Porter (1985), Pica and Doughty (1985) and Doughty and Pica (1986). Doughty and Pica, for example, observed no significant

differences between dyad interaction patterns and small group interaction ones. Their hypothesis that "...more modified interactions would occur in the dyad situation than in the group situation" was not borne out (Doughty and Pica 1986: 316). For the purpose of this study, it was important to find out whether group interactions have a different effect on the production of modified comprehensible output from dyadic interactions in relation to initiation (other- and self-) occurrences.

As mentioned in the preceding section, in order to set up this activity in such a way as to give all participants equal opportunities to supply and request information, a consensus-reaching (decision-making) discussion would have to take place because it is likely to give every interactant the same opportunities as others for talk. The activity selected for the purpose of the present study was to draw up part of the Constitution of 'a newly independent country', named here *Freedonia* (See Appendix 3). As in the case of the opinion-exchange task, subjects were also given 5 minutes additional reading time to formulate their views, opinions, arguments, etc. They were also given a copy of that task each, including a written set of instructions as well as an oral explanation of the procedure. These included the following:

(1) Read your hand-out until you understand it fully (perhaps you need to read it once or twice),

(2) Get together with the other members of your group,

(3) Try to draw up the constitution (or part of the constitution) of your newly independent country (Freedonia),

(4) You have to reach unanimity with regard to every item you discuss,

(5) You are not bound by the order in which the items are listed on the hand-out (i.e., you may discuss item 3 before item 2 or 1, if you wish to),

(6) Take as much time as you like. You will probably need 45-60 minutes to draw up at least part of the constitution of Freedonia.

Informants were asked to group themselves into two equal groups. Since they were 11 subjects in all, one group had 6 and the other 5 members. The two groups were

simultaneously video-taped in two separate classrooms: Group A by the researcher and Group B by the researcher's assistant. The first group (Group A) consisted of 6 NNSs: 3 males and 3 females. The second group (Group B) consisted of 5 NNSs: 3 males and 2 females. The students knew each other since they all were classmates on the same EAP programme. The 11 NNS informants who participated in this particular task represented 7 L1 backgrounds: Afrikaans, Arabic, Cantonese, Korean, Mandarin, Serbo-Croat, and Spanish. Table 5.5 below displays the distribution of the 11 NNSs who participated in the decision-making task by mother tongue and gender:

Table 5.5: Distribution of the 11 NNS decision-making interactants by mother tongue and gender

Mother Tongue	Group A			Group B		
	No of part.	Sex		No of part.	Sex	
		Male	Female		Male	Female
Afrikaans	1	1	-	1	-	1
Arabic	2	1	1	-	-	-
Cantonese	-	-	-	1	1	-
Korean	-	-	-	1	1	-
Mandarin	-	-	-	1	1	-
Serbo-Croat	1	-	1	-	-	-
Spanish	2	1	1	1	-	1
Total	**6**	**3**	**3**	**5**	**3**	**2**

(N.B.: The numbers are so small. They should not be regarded as stereotypical of the speakers of their MTs or country backgrounds.)

In the video-taping rooms, members of each group sat around a table in an informal way, even though this meant that two informants in each group were sitting with their backs to the camera. This ensured a relaxed and informal context which minimized the effect of the presence of the camera. In addition to the video-taping, an additional tape recorder next to each group was recording to supplement the sound quality of the video

recording. Students were assured that they were not being tested and that the recording was just for experimental purposes (i.e., not for publication or distribution).

One session (Group A) lasted 35 minutes and the other (Group B) 33. By this time each group had reached decisions on at least 4 of the 6 items of the task.

5.4 Data Transcription

At least two weaknesses may be singled out in previous transcription techniques used in most other studies:

(1) Most of the other studies in the field have been **suggestive and explanatory** in their transcription techniques as is shown by their use of punctuation marks, italics, capitalization, etc. (See, e.g., Schumann 1975, Kasper 1985, Wesche and Ready 1985, Varonis and Gass 1985b, Hirvonen 1985, Avery, Ehrlich and Yorio 1985, Hawkins 1985, Gass and Varonis 1986, Brock et al. 1986, Schinkle-Llano 1986). In many cases, the use of punctuation marks reflects what the investigator/researcher *thinks* the subject is saying or trying to communicate rather than *reflecting* what the subject is actually communicating. Such interpretive markings may weaken the authenticity and the credibility of data coding and analysis. A typical example is the following:

NS: What's the movie tonight? (referring to TV)
NNS: I don't know.
NS: What was is last week?
NNS: Yesterday?
NS: Yeah.
NNS: Em, ah, no, me mo, no looked, no?
NS: You didn't look at it?
NNS: No. Eh, e, I look play.
NS: You play?
NNS: No, I look play hockey. The game.
NS: You play hockey? You play the game?
NNS: No! In the television.
NS: Uh, huh?
NNS: I'm looking one game.

NS: At a game, you looked at a game on television. What kind of game?
NNS: Hockey.
(from Schumann 1975 transcripts)
(quoted in Schachter 1984: 175)

(2) Many previous techniques for transcription have failed to take the **sociolinguistic aspects** of an interaction into consideration. Conversations manifest features such as overlap, interruption and simultaneous speech by two or more parties. In general, transcription techniques used in other studies have followed one of two strategies:
(i) The most common technique has been to start all turns at the left-hand margin of the page, as in dramatic transcription. Indeed most of the studies mentioned in (1) above have used this strategy, in particular Schumann (1975), Hatch et al. (1986), Gass and Varonis (1986), Porter (1986), Brock et al. (1986) and Schmidt and Frota (1986). For example:

NS: What ki- what size bed do you have?
NNS: I don't know. I don't know the inches, you know.
NS: No no. Is it just- Is it for one person or two people?
NNS: One person.
NS: Single.
NNS: Single yeah single.
NS: Mm. I should look around.
NNS: I have two single beds.
(from Brock et al. 1986: 235)

(ii) A recent transcription technique used in other studies is to use two separate columns: normally one for the NS and the other for the NNS (e.g., Pica and Doughty 1985, Pica et al. 1987, Doughty and Pica 1986, Sato 1986, Duff 1986, Pica 1987, 1988, Pica et al. 1989). For example:

NNS: one of them is people who lives in	NS: people who what?
NNS: lives in	NS: who's living?
NNS: yeah inside	NS: living inside?
NNS: yeah	NS: ok

(from Pica et al. 1989: 71)

It is clear, then, that both strategies fail to mark important conversational features. If a transcription is to represent an interaction, these features may not be ignored. Therefore, the present transcription, drawing on earlier transcription techniques from conversational analysis such as those used by Gaskill (1980) and Schwartz (1980), marks the conversational aspects of an interaction such as interruptions, overlaps, simultaneous and continuous speech, in addition to the conventional markings of pauses, turn-taking, turn-giving, etc. (See Appendix 4 for samples of the transcription system used in this study). An example of such transcription technique followed in this study is the following:

```
NNS: it's it's not reasonable fo fo  how do you say it
     the the man when when he come when he go when he go
     home (0.7) he can't see her wife
NS:                                        emm
NNS:                                        it's it's too
     much fort for the the woman to go out is not
     reasonable (0.8) is not acceptable (0.8) you
     see
NS:  yes
NNS:    but he his way also  the man is also (1.0) (low
     voice) how do you say (laughs)
NS:                              the man is what
NNS: (very low voice) the man is also (4.0) he's not he's
     not so bad actually  but (2.0) oh maybe lack of
     communication  I think   the reason (laughs)
NS:  yeah
NNS:    yeah it's their age
NNS: (2.0) is it too
NS:  (4.0) emm I think yeah there is a lot of lack of
     communication  isn't there
NNS: yeah
(OE 1: 10-29)
```

(OE: opinion-exchange task)

Systematically selected 5-minute samples (between minutes 2-6 inclusive) of each audio-taped activity were later transcribed for analysis. Several factors played a part in the selection of these samples. First, drawing on earlier studies (e.g., Pica and Long 1986, Duff 1986, Gass and Varonis 1985a, 1986, Varonis and Gass 1985b), which selected samples ranging between 5 and 10 minutes, it was believed that sufficient data for analysis would be obtained from the 5-minute sample from each encounter selected in the present study. Second, As one picture-dictation encounter and three opinion-

exchange encounters ended after 6-7 minutes, to maintain systematicity only the first 6 minutes of the other 28 dyadic encounters were transcribed for analysis. Third, the first minute of each encounter was not selected for analysis for two reasons. (1) The researcher found out from informal follow up discussion with some of the informants that initially they felt a little concerned at being recorded, etc. To minimize the possible effect of this feeling of anxiety on the data studied (since this might have a negative effect on their ability to produce MCO), the first minute of each encounter was not therefore selected for analysis. (2) The researcher wished to minimize the effect of the conversational preliminaries which generally precede focusing on the specific topic of the task to be performed (Aston 1986: 132).

In the decision-making group tasks, the length of time was adjusted to take into account the number of speakers. Therefore, 15-minute samples from each videotape were selected for transcription and analysis. In selecting which parts of the videotapes to transcribe, two additional factors were taken into consideration: the sample was selected (a) so as to include the movement to a new item for discussion following a decision on the previous item, and (b) so as to obtain a transcription of the same item as discussed by both groups from start to finish.

Parts of the tapes selected were transcribed by the researcher, double checked and recorded on the University mainframe computer in WordPerfect. To get as close a transcription as possible and to ensure the highest possible quality, a team of 9 NSs of English re-checked (verified) the transcriptions to ensure their accuracy. They were all given an introductory session informing them what to expect and what they were expected to do. In a limited number of cases where there were still unresolved transcription difficulties, the original informants were invited to interpret.

The final transcription was intended, therefore, to reflect what was recorded during the tasks with all its linguistic, sociolinguistic and paralinguistic features marked in the transcription. These included all hesitation fillers, semi-audible murmuring, low voice quality, indications of unintelligible language, comprehension checks/signals,

confirmation requests/signals, clarification requests, repairs, interruptions, overlaps, simultaneous speech, pauses, turn-giving and turn-taking moves. The rationale for the elaborate quality of the transcription is that making one's transcription as descriptive as possible adds to the validity, reliability and credibility of the analysis of the data, and the results of the study as a whole.

This Chapter has detailed the methodology followed in this study. It has also discussed the extent to which it mirrors and departs from earlier practice with regard to its choice of sample, tasks, data collection procedures and method of transcription. The next Chapter will deal in full with the model developed for the coding and analysis of the data.

Notes:

1. Pica et al. (1989: 72) are referring to the information-gap (picture-dictation), opinion-exchange and jigsaw tasks which they employed in their study. As can be seen, the present study uses tasks similar to the first two in Pica et al.'s (1989) study.

2. This distribution allows the findings of the present study to be compared to those by Gass and Varonis (1986) and Pica et al. (1989) with regard to the effect of gender on the negotiation of meaning, the provision of comprehensible input and the production of comprehensible output. Both studies observed an effect of gender in their findings. For instance, Gass and Varonis (1986) used similar tasks (a conversation task and two picture-description tasks) with 10 NNS dyads (4 male/female pairs, 3 male/male pairs and 3 female/female pairs). They found that there were obvious sex differences. In particular they observed that men took greater advantage of the conversation to produce a greater amount of comprehensible output, whereas women utilized the conversation to obtain a greater amount of comprehensible input (Gass and Varonis 1986: 349).

Chapter Six

A Model for NNSs' Production of Modified Comprehensible Output

(approach to coding and data analysis)

This Chapter deals with the model within the framework of which data were examined, analyzed and coded. It consists of four main sections. Section one deals with interactions and ways of negotiating the meaning and their effect on NNSs' production of modified comprehensible output (MCO). Section two presents in detail the modified comprehensible output model developed for the analysis and the coding of the data. Section three delineates the areas which will be excluded from the analysis and those which will be included. And section four presents the specific areas which will be analyzed. A detailed Chart showing the primes, main categories and subcategories of the model is attached to the end of the fourth section.

6.1 Negotiation of Information Units and the Provision of Comprehensible Output

In order to show how the different categories and types of other-initiated clarification requests, self-initiated clarification attempts and modified comprehensible output work in interactions, it is necessary to consider first the various types of information units, and the proportion of these categories in relation to these units. Examining the number and types of these routines in information units is important because this may show, for example, which task/activity contains more other-initiated clarifications or self-initiated clarifications per information unit.

An information unit may be operationally defined as *a piece of oral text which provides a proposition or an idea (with potentially identifiable features) which is understood or at least potentially understood by some addressee.* One could argue that an information

unit contains a generative mechanism comparable to syntax. This means that it is like a sentence: it allows different combinations and is made up of different kinds of constituents. Indeed the actual structure of an information unit varies with regard to the different categories it may contain. So, for example, an information unit may contain some or all of the following categories: comprehension checks, confirmation checks/requests, clarification requests, self-repetitions, other-repetitions, expansions, short/long pauses, topic-initiation moves, direct and indirect appeals. (1) is an information unit which contains a request for confirmation:

(1) NNS: and then just in front of the door there is a chair another chair
NS: (1.0) chair in front of the door
NNS: yeah
(PD 1: 15-18)

(2) is an information unit which contains clarification requests (*which side of the door*), requests for expansions (*no*) and indirect appeal (*it's difficult to describe*):

(2) NNS: yeah a coat is hankt in the wall
NS: yeah which side of the door
NNS: is eh (3.0) left (2.0) left yeah if we if we we walk in the door in the in the left hand side and then in the wall
NS: oh um
NNS: (2.0) and then there is a a wall which have a window it's just ennn (2.0) it's difficult to describe just the woo the direct wall understand (laughs)
NS: no
NS & NNS: (laugh)
NNS: there is three walls (low voice) in the room
NS: yes
NNS: yes is a when we look at is er the one not not in the side is in the not in the two side not in the side of the door
NS: ahhah
NNS: and not in the opposite side of the door
NS: right
NNS: yes on that side of the wall there is a window
NS: okay
(PD 1: 21-44)

Also, the provision of an information unit may be negotiated with the interlocutors as in (2) above, or it may be completed by the speaker without the need for negotiation as in (3) below:

```
(3) NNS:                                          it's it's too
          much fort for the the woman to go out  is not
          reasonable  is not acceptable  you see
    NS:   yes
(OE 1: 14-17)
```

In (2) the information unit was not initially accepted as offered, owing to partial or complete non-understanding on the part of the hearer. And therefore it had to be negotiated until it became acceptable to the speech partner involved. In (3) the information unit was provided by the speaker and was readily understood or accepted by the interlocutor.

Information units may also vary in length: an information unit can be short as in (4):

```
(4) NNS:  and then (2.0) just opposite the emmm bedt   the
          bedt is on the right hand side of the picture
          and then just  on the left hand side there is a
          dtoor  door
    NS:   (3.0) right
(PD 1: 11-14)
```

Or it can be long as in (5):

```
(5) NNS:  but he  his way is also  the man is also (low
          voice) how do you say (laughs)
    NS:                              the man is what
    NNS:  (very low voice) the man is also (4.0) he's not
          he's not so bad actually but (2.0) oh maybe lack
          of communication I think  the reason (laughs)
    NS:                                                yeah
    NNS:  yeah  it's their age
    NNS:  (2.0) is it too
    NS:   (4.0) emm I think yes there is a lot of lack of
          communication isn't there
    NNS:  yeah
(OE 1: 18-29)
```

These two examples also illustrate the effect of the task or activity on the length and nature of an information unit. Generally, a picture-dictation activity provides shorter

clear cut information units, while an opinion-exchange activity is likely to provide longer more negotiated information units as will be seen later.

6.2 Modified Comprehensible Output (MCO): The Model

Following the observations by Varonis and Gass (1985b), in most conversations (regardless of whether the speech partners are native or non-native speakers), the discourse progresses in a linear fashion, which will be represented here by a **horizontal line.** When the interlocutors share a common background and language, the discourse is likely to proceed smoothly along this horizontal line. However, in discourse where there is not shared background, or in which there is some acknowledged incompetence (as in the case of most L2 learners), the conversational flow is often interrupted. These interruptions or deviations may be seen as **vertical sequences** or pushdowns from a horizontal progression. Vertical sequences or pushdowns can be operationally defined as *instances/routines which interrupt the horizontal progression of the conversation for the sake of reaching acceptable mutual understanding of a certain information unit, either (a) by giving the speech partners an opportunity to negotiate the meaning or (b) by giving the speaker of the trouble-source the opportunity to provide self-initiated clarifications.* To deal with these deviations, the following model (Figure 6.1 below) was developed as a framework for describing the production of modified comprehensible output and as a guideline for the coding and the analysis of the data:

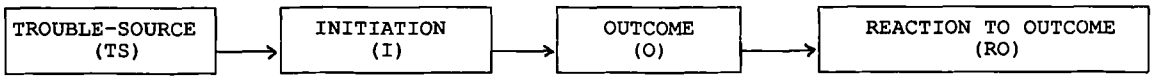


Figure 6.1: A proposed model for the production of modified comprehensible output

The model falls into four functional primes: The first prime consists of a trouble-source or trigger (denoted by TS). The second prime consists of an initiator (denoted by I), which can be either self- or other initiation. The third prime is the outcome of initiation

(denoted by O). And the fourth prime consists of the interlocutor's reaction to the outcome (denoted by RO)[1].

We begin by noting that a TS may be either ignored or reacted to. In cases where the TS was ignored, there is often no way for the investigator to recognize that there was a breakdown in comprehension or communication, although something later in the discourse may indicate that in fact the listener had not understood, or that the speaker did run into difficulty but did not initiate repair (Hawkins 1985, Varonis and Gass 1985b). The TS, on the other hand, may be reacted to, either by the interlocutor(s) in which case we have **other-initiation,** or by the originator of the TS himself/herself in which case we have **self-initiation.**

The outcome of initiation can take different forms including failure to repair, appeal for help, switch to a new topic, or successful repair which is considered in this study to lead to the production of modified comprehensible output. The RO is an optional unit of the routine. It helps to tie up the routine before the speakers return to the main flow of conversation.

Also following Varonis and Gass (1985b), **comprehension checks** can optionally occur anywhere along the horizontal or vertical steps of the model, which will be indicated by the optional (CC) in Figure 6.2 below:

TS ——→(CC) ——→I ——→(CC) ——→O ——→(CC) ——→RO ——→(CC)

Figure 6.2: Extended model for the production of modified comprehensible output (Adapted from Varonis and Gass 1985b: 75)

TS= Trouble-Source
CC= Comprehension Checks
I= Initiation
O= Outcome
RO= Reaction to Outcome

(6) is an example where CC occurs after the outcome of self-initiated self-completed repair/clarification:

```
(6) NNS:  and then there is a a wall which have a window
          it's just ennn (2.0) it's difficult to describe
          just the woo  the direct wall  understand
    NS:   no
    NS & NNS:(laugh)
(PD 1: 43-47)
```

(7) is an example in which CC occurs after the outcome of other-initiated-self-completed repair:

```
(7) NNS:  (2.0) true   and below just there  there  there
          emm (1.0) they put it in paile
    NS:   sorry
    NNS:  paile (0.8) understand
    NS:   no  are they in a pair (2.0) in a pair
    NNS:  yeah in a pair
(PD 1: 78-83)
```

By the same token, the speech partners can "pop" out of the conversation at any point designated by an arrow (Varonis and Gass 1985b: 75). So, for example, a pop out before the outcome is possible, indicating either that the initial trouble-source speaker does not recognize that the conversation has to be negotiated, or that he/she is not willing to negotiate.

In the light of these arguments, modified comprehensible output is defined as the ***output which NNSs achieve to make an initial speech turn more comprehensible either (a) when they are asked by their interlocutors to make themselves understood with regard to a speech turn or part of it which results in a partial or total lack of understanding on the part of the hearer(s), or (b) when they realize that their current or previous utterance or part of it is totally or partially incomprehensible to their interlocutors.*** On the basis of this definition, investigation will focus on L2 learners' production of MCO (elicitation and analysis) in relation to the tasks, conditions and other variables specified in this study. However, examining learners' MCO may also include studying its aspects, the strategies which NNSs follow in its realization, and the precise role it plays in SLA. *Aspects* refers to features and characteristics of this modified output, its nativelikeness and its systematicity and variability. *Strategies* refers to any communication strategy or repair strategy which NNSs follow in its production. *Role*

refers to the significance of NNSs' production of MCO in the SLA process and development.

Also on the basis of this definition, the model operates according to two different but closely related mechanisms: the first mechanism implies the presence of interpersonal negotiation of information units which may be described as *routines/instances in which negotiation of meaning takes place between interlocutors.* The second mechanism implies the provision of information units which are completed without negotiation of meaning and these may be described as *routines/instances in which no actual negotiation of meaning takes place.* In order for the model to be adequate, it should account for both mechanisms, because both may lead to modification in the NNSs' production so as to achieve comprehensible output.

Jefferson (1975), Schegloff et al. (1977), Schwartz (1980), Gaskill (1980), Fathman (1980) and Kasper (1985) observed that there are certain types of trouble-sources and initiations associated with each mechanism. These differences may affect the nature of the outcome. It will be important, therefore, to see if there are any observed differential effects on the production of comprehensible output with regard to each mechanism. It is necessary, then, to distinguish between the production of modified comprehensible output which comes about as the result of other-initiation and that which comes about as the result of self-initiation. For this reason, if clarifications or repairs were initiated by the interlocutor(s) and completed by the originator of the trouble-source, we have what might be called **other-initiated modified comprehensible output.** If, on the other hand, clarifications or repairs were both initiated and completed by the originator of the trouble-source, we have what might be called **self-initiated modified comprehensible output.** These two mechanisms will be illustrated separately in the following two sub-sections.

6.2.1 Other-initiated modified comprehensible output

Other-initiated modified comprehensible output (OIMCO) is defined as *the output which NNSs achieve to make an initial turn more comprehensible when they are asked by their speech partners to make themselves understood with regard to an utterance or part of an utterance which results in some kind of non-understanding on the part of the hearer(s).* A descriptive model was originally developed by Varonis and Gass (1985b) to account for non-understanding routines in interactions involving pairs of NNSs and was adopted in their later studies (e.g., Gass and Varonis 1986). It was also adopted by SLA researchers who investigated NNSs' production of comprehensible output, particularly, Pica (1988) and Pica et al. (1989). As displayed in Figure 6.3 below, this model, like the main model, falls into four functional primes: a trouble-source, other-initiation, outcome and a reaction to the outcome:

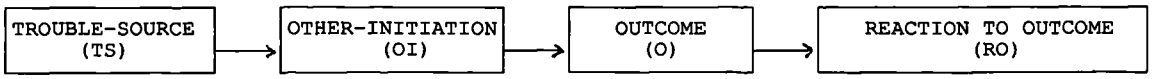


Figure 6.3: A proposed model for the production of other-initiated modified comprehensible output (Adapted from Varonis and Gass 1985b: 74)

6.2.1.1 Trouble-sources

The trouble-source is an utterance or part of an utterance on the part of the speaker which results in some kind of non-understanding on the part of the hearer. Trouble-sources can occur in any aspect of discourse (a question, an answer, a statement, etc.) and may relate to linguistic, referential or pragmatic problems. In (8) there is an example in which the trouble-source arises in a question:

(8) NNS: ann er what do you call this (0.7) how do you call this
NS: emm
NNS: what do you call on the wood before putting something (0.8) hanging something

(PD 3: 307-310)

In (9) there is an example in which the trouble-source arises in an answer to a question:

(9) NS: what is it for
NNS: for for fowers
NS: oh for flowers yes
(PD 1: 7-9)

In (10) the trouble-source arises in a statement:

(10) NNS: On the table there's two fask (1.0) (low voice) two fask and a cup (1.0) annnd somethin somethin I don't know what to
NS: two two what
(PD 1: 10-12)

It is important to note that a trouble-source is recognized only in retrospect: when it has been reacted to by the hearer. This means that there are instances of trouble-sources not recognized by the hearer and therefore not reacted to.

6.2.1.2 Other-initiated requests

In response to an observed trouble-source, the indication of partial or complete non-understanding on the part of the hearer comes about in several forms: it may come through one of the three different types of **confirmation requests**: (i) requests for confirmation through repetition of NNS utterance as in (11):

(11) NNS: and then in front of the door there is a chair another chair
NS: (1.0) chair in front of the door
NNS: yeah
(PD 1: 15-18)

(ii) requests for confirmation through modification of NNS utterance as in (12):

(12) NS: what is it for
NNS: for for fowers
NS: oh for flowers yes
NNS: yeah
(PD 1: 7-10)

and (iii) requests for confirmation through completion or elaboration of NNS utterance as in (13):

(13) NNS: the change with her personality it's not in English not quite habit this kind (2.0) not another something might habit habit doing something on her birthday what is the English call she she wa want always to go out is her personality or habit or
NS: do you mean is it something that generally English women want to do
NNS: yeah yeah
(OE 1: 76-83)

Other-initiation can also come about through the use of explicit statement of non-understanding, requests for clarification, and requests for elaboration, expansion, explanation or paraphrasing by using what Schegloff et al. (1977: 380) termed "turn-constructional devices" (see Ch 3.2.2.2). Turn-constructional devices used by interlocutors to initiate repair include the use of *huh's*, *what*, a question word (*who, where, when*), a partial repeat of the trouble-source plus a question word, a partial repeat of the trouble-source turn, the use of words and expressions such as; *sorry, sorry I can't understand you, I don't follow, I didn't understand*, etc. In (14) there is an example in which the indication of partial or complete non-understanding comes from a partial repetition of the trouble-source:

(14) NNS: ann on the table you have two flask
NS: (1.0) flask
(PD 7: 27-29)

In (15) the other-initiation comes from a partial repetition of the trouble-source plus a question word:

(15) NNS: on the table there's two fask (low voice) two fask and a cup (1.0) annnd somethin somethin I don know what to
NS: two two what
(PD 1: 3-5)

In (16) there is a request for elaboration, expansion or paraphrasing:

(16) NNS: on the table there's two fask (low voice) two fask and a cup (1.0) annnd somethin somethin I don know what to
NS: two two what
NNS: two fas kfas
NS: what is it for
NNS: for for fowers
NS: oh for flowers yes

(PD 1: 3-9)

(17) is an explicit indication of non-understanding:

(17) NNS: both of them is not hopes this things divorce really happened
NS: yes both the people didn't what (1.0) sorry
NNS: yeah
NS: I didn't understand sorry
(OE 1: 2149-2153)

Schachter (1984) calls all these types of other-initiations "negative input", which she defines as: "information provided to the learner that her utterance was in some way deviant or unacceptable to the native speaker, i.e., that it wasn't understandable, wasn't grammatically correct, wasn't situationally appropriate, etc" (Schachter 1984: 168).

6.2.1.3 The outcome

The NNS can respond to the request for additional information which has been either implicitly or explicitly stated in 6.2.1.2 above in various ways. One possibility is that the NNS may switch to a new topic. Or the NNS may ignore the signal to repair, as in (18):

(18) NNS: (6.0) ann on the back have two pillow
NS: at the back
NNS: (6.0) and between the window annd towel just above the table
(PD 6: 652-655)

Or fail to repair, as in (19):

(19) S1: I can see a the thing that you put your clothes
S2: it's a wardrobe
S1: a wardro no no no it's a wardrobe yes no a a wooden a wooden
(PD 13: 1667-1671)

Or may respond by expression of difficulty in responding to the signal, as in (20):

(20) NS: which corner
NNS: err (3.0) the pigture is not sure of the er which corner
(PD 8: 810-812)

Or may react by inserting new, but not directly relevant information, as in (21):

(21) NS: can you see the door er full view
NNS: it's err rectangular door in the whole
(PD 7: 732-734)

Or react by repetition of the original trouble-source utterance or part of it without modification, as in (22):

(22) NNS: (2.0) true and below just there there there
emm (1.0) they put it in paile
NS: sorry
NNS: paile (0.8) understand
NS: no are they in a pair (2.0) in a pair
NNS: yeah in a pair
(PD 1: 78-83)

Or by confirmation or acknowledgement of the signal only, as in (23) and (24):

(23) NNS: a glass (3.0) another sing which name in
English I don't know but common in cooks (2.0)
well in total you have a plate
NS: a plate
NNS: yes
(PD 6: 697-700)

(24) S1: pillows or (0.9) the pillows are in the top
(5.0) and the that is inside the bed
S2: (3.0) you said two pillows eh
S1: yes two pillows
(PD 13: 1580-1584)

Or by modifying the initial trouble-source utterance phonologically, morphosyntactically or semantically, or by a combination of two or more of these strategies, thus producing what is considered in the present study to be **other-initiated modified comprehensible output.** (25) is an example of phonological modification:

(25) S1: it's a betroom
S2: a bed whom
S1: a bedroom a bedroom
(PD 9: 954-956)

(26) is an example of morphosyntactic modification:

(26) S1: two small bottle
S2: two small what
S1: bot (1.0) small bottles
S2: yeah
(PD 9: 1068-1071)

Semantic modification can be achieved through the use of *synonyms, paraphrase, examples, description, circumlocution*, etc. (27) provides an example for the use of synonyms (*towel/handkerchief*), paraphrase and description (*for washing or bathing*):

(27) S1: and near the door I mean next the door there is a towel a towel
S2: a table
S1: no towel er handkerchief like not not exactly means handkerchief a towel (laughs) called towel
S2: I have to make some
S1: a towel is er for washing or bathing
S2: ah yes yes
(PD 11: 1268-1275)

(28) is an example of substitution:

(28) S1: above the bed
S2: above
S1: you have yeah above on the top of the of the bed
(PD 14: 1808-1811)

(29) is an example of paraphrase and/or description:

(29) S2: wha' is it
S1: desk bedt bed bed bed is used for to sleep in
S2: oh bed
(PD 15: 1878-1880)

6.2.1.4 Reaction to the outcome

The final prime of the model is an optional unit of the routine. Varonis and Gass argue that:

> "In some way this [reaction to outcome] helps tying up the routines before the speakers pop back up to the main flow of conversation" (Varonis and Gass 1985b: 77).

Typically, in order for the negotiation of meaning to be completed, the interlocutor provides an explicit signal of comprehension or provides topic continuation moves which allow the conversation to continue, or abandons the topic with the possibility of recycling to it later in the discussion. (30) is an example of comprehension signal:

(30) S1: annd two small bottles

```
     S2:                          two small what
     S1:  bot (0.6) small bottles
     S2:  yeah
(PD 9: 1068-1071)
```

(31) is an example of a continuation move:

```
(31) NS:  is the bed at the top or the bottom of the
          picture
     NNS: emm (2.0) it's on the right side of the picture
     NS:  right  carry on
(PD 3: 229-231)
```

We now look at two negotiated routines which illustrate the processes of other-initiated modified comprehensible output. (32) provides a simple negotiated interaction which required a single-signal for the intended information unit to be conveyed successfully:

```
(32) NNS: near the bed er there is the ennn enn chair..TS
     NS:  yeas in front of the bed or where.............OI
     NNS: emm eh on the right...........................O
     NS:  okay..........................................RO
(PD 4: 329-332)
```

(33) is an example of a more lengthy information unit which illustrates complex and embedded layers with four 'vertical pushdowns' for the negotiation of meaning. The routine is modelled in Figure 6.4:

```
(33) S1:  and another side one in that er (1.0) in side
          of table  em napkin is hanging.................TS
     S2:  what.........................................OI
     S1:  napkin or towel..............................O/TS
     S2:  what.........................................OI
     S1:  towel towel or napkin for  er rubbing hand
          or (2.0) napkin or towel towel................O/TS
     S2:  I don't know what is it......................OI
     S1:  ehh..........................................O/TS
     S2:  what is this for.............................OI
     S1:  for men   wash wash..........................O
     S2:  uhh washing  washing hand  yes...............RO
     S1:                                  yes yes hands
          (1.5) and (3.0) er door (3.0) and door....
(PD 10: 1235-1247)
```

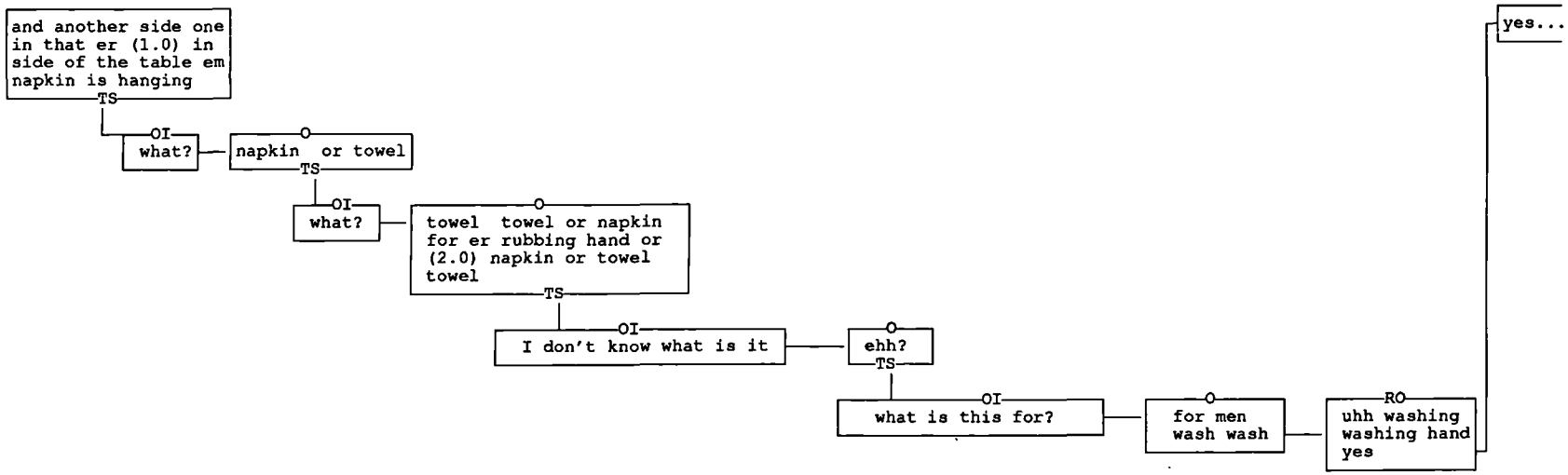


Figure 6.4: An extended model representing the production of other-initiated modified comprehensible output

TS= Trouble-source
OI= Other-initiation
O= Outcome
RO= Reaction to outcome

Varonis and Gass's model looks only at responses and modifications by NNSs when they are asked by others (mainly NSs) to make their output comprehensible. It overlooks instances in which NNSs try to make their output comprehensible by self-initiating and self-repairing the trouble-source they may encounter without the assistance of their interlocutors. These instances are very important since studies on repair work and communication strategies show that when NNSs are faced with communication difficulties due to their limited L2 linguistic resources, they tend to repair for themselves before seeking the assistance of their interlocutors (see Ch 3.2 & 3). The next section therefore deals with the second mechanism of the model for the production of modified comprehensible output: NNSs' production of self-initiated modified comprehensible output.

6.2.2 Self-initiated modified comprehensible output

Self-initiated modified comprehensible output (SIMCO) is defined as *the output which NNSs achieve to make an initial turn more comprehensible when they realize that their current or previous utterance or part of it is totally or partially incomprehensible to their interlocutors*. On the basis of this definition, the second mechanism of the model, therefore, relates to routines in which the trouble-source is both recognized and repaired by the speaker of the trouble-source himself/herself. Like the first model, this model also falls into four functional primes: trouble-source, self-initiation, outcome and, optionally, reaction to the outcome[2] (see Figure 6.5):

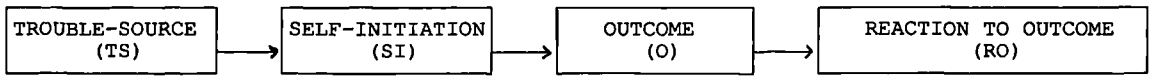


Figure 6.5: A proposed model for the production of self-initiated modified comprehensible output

6.2.2.1 Trouble-sources

Trouble-sources in self-initiated repairs can originate from linguistic or referential problems. Linguistic problems may occur at the phonological, morphosyntactic and lexical levels. (34) is an example in which the trouble-source is phonological:

(34) NNS: ....on the left hand side there is a
dtoor door
(PD 1: 13-14)

(35) is an example in which the TS is due to lexical choice:

(35) NNS: yes and on the le (0.7) on the right of the fo
(0.8) of the picture there's bed
(PD 16: 41-42)

(36) is an example in which the trouble-source is morphosyntactic:

(36) S1: but he want wanted her to be at home the whole
day and that's not fair
(OE 13: 3674-5)

(37) is an example in which the TS originates from a referential problem:

(37) NNS: beside the beside the window
NS: yes
NNS: (1.0) on the western (0.9) on the eastern wall
NS: yes
NNS: there is something you call emm picture
(PD 4: 383-387)

6.2.2.2 Self-initiated clarification attempts

Following Jefferson (1975) and Schegloff et al. (1977), there should be an overt marker for self-initiation of repair which can be indicated by three means:

(i) lexical means: These include the use of words and expressions such as *I mean, you know, I wanted to say, now, oh yes but,* etc. (38) is an example in which self-initiation is indicated by the use of *I mean*:

(38) NNS: and then (1.0) the wall just in front of me
(0.7) I mean behind the door
(PD 3: 264-266)

(ii) non-lexical means: These refer to some kind of perturbation, exhibited by an interruption or disfluency between the two parts of the utterance, which shows that self-repair is being initiated. Such disfluencies and interruptions include *cutoffs, pauses, er's em's, uh's, en's* and the like. It is only when the candidate repair that follows is used, that one knows which item is being singled out for repair, because the actual non-lexical perturbation in same-turn repair neither locates a trouble-source nor supplies repair. Schegloff et al., for instance, point out that:

> "Same-turn and transition-space self-initiation/self-repair can, and overwhelmingly do, combine the operations of locating the repairable [i.e., the trouble-source] and doing a candidate repair... In the vast majority of cases, the trouble-locating is compacted into the repair-candidate itself, both being done by a single component, and being done in the same turn as the trouble-source" (Schegloff et al. 1977: 376).

The basic format for this type of self-initiation of repair is, then, self-initiation (with non-lexical initiator such as *er, eh, huh*) followed by a candidate repair. (39) is an example where self-initiation of repair is exhibited by a pause:

(39) NNS: yes because the woman is the wife always go out
and left his his (0.8) her husband and her son
in the home (1.0) at home
(OE 1: 6-8)

And in (40) there is an example in which self-initiation of repair was signalled by a cutoff:

(40) NNS: (2.0) and then there is a a wall which have a
window it's just ennn (2.0) it's difficult to
describe just the woo the direct wall
understand (laughs)
(PD 1: 28-30)

In (41) there is an example in which self-initiation of repair was signalled by the use of *eh*:

(41) NNS: and er I don't think that they have to be eh
(1.0) to get divorced because of that
(OE 13: 3773-3775)

In (42) there is an example in which self-initiation was signalled by the use of *er*:

(42) NNS: ...to take er err have some independence
(OE 16: 3978-9)

(iii) extralinguistic means: These include eye gaze, hand movement, lip parting, etc. Schwartz (1980) argued that extralinguistic means normally signal repair initiation in combination with non-lexical means (*pauses, cutoffs, er's, eh's, em's*, etc.). Typically to initiate self-repair, the NNS pauses, says "uh", turns his/her eye gaze away from the speech partner(s), and looks either up or down, sometimes fluttering the eyelids, as in (43):

(43) S5: I I don't agree I think this is not democracy parliament
S6: it's not hundred percent democracy
S5: maybe one hun (0.6) one hundred people and this people may er er (0.9) maybe from another party
S3: yes not democracy
S5: from ano (1.0) from another thi thinking and I think that em we we may er er how do you say
S1: but err
S5: it is very (0.7) this is very emeh im difficult to say which which person
S1: but eh
S5: want...
(DM 1: 422-440)

In this instance, the speaker (S5) made several self-repairs accompanied by hand movements, looking up and down, turning her head to left and right and changing her body posture repeatedly. These extralinguistic means together with other non-lexical self-initiations (*cutoffs, pauses, er's, em's*) helped the speaker to retain the turn and thus to perform a series of self-repairs.

It is important to note that 'initiator' for self-repair is used in a very technical sense, because it is difficult to argue that this is the psychological initiator of a repair. The notion of perturbation as an initiator can only be taken as the marker of the repair or intention to repair, since the decision by the speaker of the trouble-source in need of

repair must have been taken before the actual self-initiation occurred. In other words, in order to self-initiate repair, there must be a trouble-source and a psychological decision to initiate a repair.

6.2.2.3 The outcome

The outcome of self-initiation can be failure to repair, appeal to the interlocutor, the expression of difficulty in repairing or communicating the intended message, repetition of the original TS utterance or part of it without modification, or modification in the original TS utterance which is considered in this study to lead to the production of self-initiated modified comprehensible output. (44) is an example of **failure to self-repair** whereby the speaker of the TS failed to repair for herself:

(44) NNS: yeah (3.0) ennn (5.0) annn (3.0) next jus a little bit beside the door there is a there is a cloat clo clo
NS: a coat
NNS: yeah a coat is hankt in the wall
NS: yeah
(PD 1: 18-22)

On the one hand, this example shows that the speaker of the trouble-source has failed to repair for herself. The repeated attempts at apparently unsuccessful self-repair, on the other hand, were taken as an indirect appeal for help from the hearer's viewpoint. (45) is another example of **indirect appeal** for help:

(45) NNS: yes a glass (3.0) another sing which name in English I don't know but common in cooks
(PD 7: 697-698)

Appeal to the interlocutor for help may be **direct** as in (46):

(46) NNS: what you call on the wood before putting something hanging something
NS: a hook
NNS: yeah there is a hook
(PD 3: 310-313)

The outcome may also result in **explicit (metalingual) expression of difficulty in repairing or communicating the intended message**, as in (47):

(47) S3: yeah because they change the grand council after five years so they can change a different president not not enn I don't know how to say (laughs) (1.0) weak (laughs)
(DM 2: 816-818)

Or **repeating the original TS utterance or part of it without modification,** as in (48):

(48) NNS: on the table there's two fask (1.0) (low voice) two fask and a cup
(PD 1: 10-11)

However, the outcome may finally result in self-repair which helps to achieve what is considered in the present study to be **self-initiated modified comprehensible output** at the phonological, morphological, syntactic and semantic levels or a combination of two or more of these. Self-initiated modified comprehensible output is achieved by following one or more of the following communication strategies and repair techniques:

(i) by following one or more of the various self-dependent achievement strategies in production, which are defined as those strategies which NNSs follow to make themselves understood in cases which do not call for the assistance of the interlocutors (Ellis 1985a: 184) (See also Ch 3.3.1.1). These strategies include phonological, syntactic, morphological and semantic modifications. (49) is an example of phonological modification:

(49) NNS: ...and then just on the left hand side there is a dtoor door
(PD 1: 21-22)

Syntactic modification is achieved through, for example, embedding, elaboration in clauses(s) and the use of grammatically correct syntactic structures. (50) is an example of syntactic modification:

(50) NNS: yes because if the woman is (0.8) the wife always go out and left his his husband (1.0) her husband and her son in the home (0.7) at home it's not reasonable
(OE 1: 2124-2126)

Morphological modification is achieved through addition, substitution or deletion of inflectional morpheme(s) and/or functor(s) as in (51):

(51) NNS: (1.0) ehh (3.0) yeah the only the on the only thing I understand is that er the wife er just only want wanted to to divorce
(OE 5: 2617-2619)

Semantic modification is achieved through the use of substitution, generalization, paraphrasing, description, exemplification, circumlocution, word-coinage, restructuring, reordering, change of direction and synonyms. (52) is an example in which the NNS uses synonyms:

(52) NNS: and then below this two photos there's two two yellow I think it's also it's picture or postcard something like that it's yellow one it's just something something is er square
(PD 1: 108-111)

(53) is an example of reordering and/or restructuring:

(53) NNS: ...but the question of independence for me is not enn (1.0) I don't accept with the people that the same purely independence (0.8) to be totally independent
(OE 1: 2251-2252)

(54) is an example of exemplification:

(54) NNS: ...in our case in Somalia ennn always man likes exactly that the way he thinks but eh for the women's enn they do all the activity (0.8) for example if they are farmer er the nomads they look after the animals er after the livestock and they look after the children they cook...
(OE 1: 2272-2276)

(55) is an example of change of direction:

(55) S4: the dominant number will take will take (0.8) be the president
(DM 1: 318-319)

(ii) Modified comprehensible output can also result from following other repair techniques such as **false starts** and **new starts.** Færch and Kasper (1983c: 215-217) argue that in most cases false starts are placed immediately next to the item to be

repaired (the trouble-source), while new starts are generally placed at a later point in the same speaker's turn, normally at a possible completion point. (56) is an example of a false start:

(56) S1: there's bed on the lef (0.9) on the right side
(PD 16: 2028-9)

(57) is an example of a new start:

(57) NNS: (1.0) so err behind (2.0) not behind er next to the window
(PD 5: 439)

Færch and Kasper (1983c: 216-217) also point out that with new starts the speaker begins his/her utterance but then changes direction not because of difficulty in continuing but because he/she realizes that the original start may not convey the intended message. So, for example, in (57) above the speaker begins by saying *so err behind* and then initiates repair by saying *not behind er*, then he restarts by saying *next to the window.*

(58) below presents an example that illustrates a series of self-initiated clarification attempts leading to comprehensible output, and in Figure 6.6 the mechanism is modelled.

(58) NNS: yes because if the woman is (0.8) the wife always go out and left his his husband eh (1.0) her husband and her son in the home (0.7) at home it's it's not reasonable
NS: emmh
NNS: for for...
(OE 1: 2124-2126)

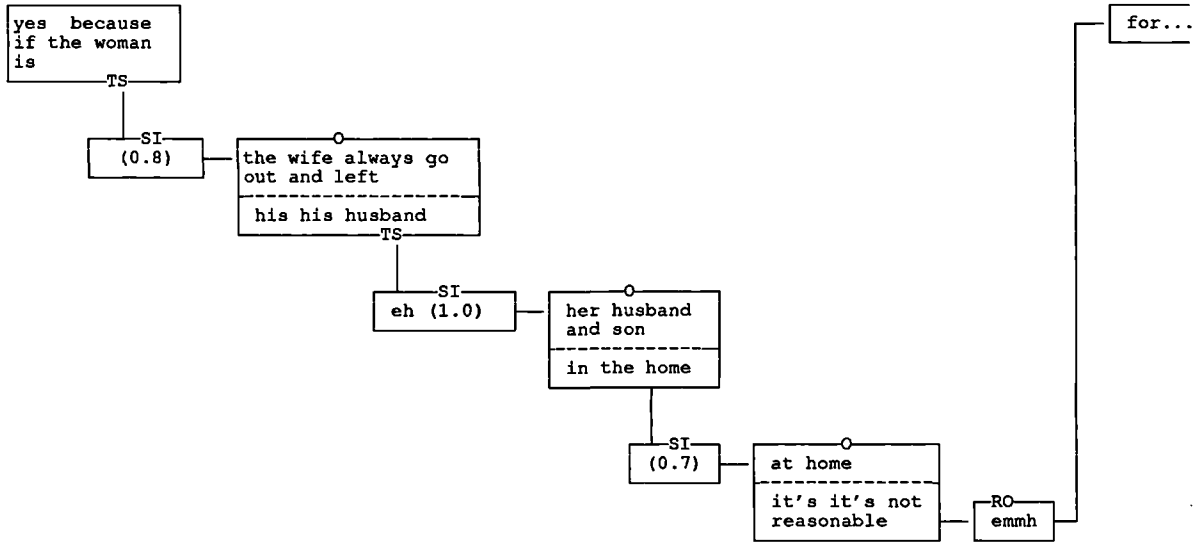


Figure 6.6: Modelling an example representing a series of self-initiated modified comprehensible output attempts

TS= Trouble-source
SI= Self-initiation
O= Outcome
RO= Reaction to the Outcome

6.3 Scope of Analysis

The data collected for this investigation always contained both initiation and outcome. It follows, then, when a trouble-source was ignored (i.e., not reacted to by the speaker or the interlocutor(s) as mentioned earlier, there is often no way for the investigator to recognize a breakdown in comprehension or communication, although something later in the discourse may indicate that in fact the listener had not understood, or that the speaker did run into trouble but did not initiate repair (Varonis and Gass 1985b, Hawkins 1985). The investigation will, therefore, look at (a) those exchanges in which there is some **overt indication** or marker supplied by the speech partner(s) indicating an interruption in the linear flow of information and (b) at those instances/routines in which there is some **overt marker** or perturbation on the part of the speaker, also indicating an interruption in the linear flow of information. In the case of self-initiated self-completed clarifications, the investigation considers not only cases in which there is a failure to communicate but also cases in which there is a potential failure to communicate. Hence, anything that causes clarification or a clarification attempt - which results from actual or potential communication breakdown - counts as an initiation for clarification (see also Long 1981, 1983a, Varonis and Gass 1985b). This is important because NNSs might be expected to be as explicit as possible because of fear of failure to communicate the intended message. This fear of communication failure results in constant modification to their output in order to make it more comprehensible.

Following Pica (1988: 51), it was believed that other-corrections do not provide evidence of NNSs' ability to produce modified comprehensible output whether in NS/NNS and NNS/NNS interactional data. These are defined as statements and directives through which the interlocutors tell NNSs what to say and possibly invite them to repeat this. Other-corrections are, therefore, excluded from the present investigation.

Furthermore, on the basis of the proposed definition for modified comprehensible output suggested earlier, the main focus of investigation in the present study relates to

instance/routines in which initiation leads to the achievement of modified comprehensible output. This implies that there are other types of initiation which are unlikely to lead to the production of modified comprehensible output, such as confirmation requests. As discussed earlier in the Chapter, other-initiations in most cases take the form of either confirmation requests or clarification requests. Confirmation requests are, by definition, utterances designed to elicit confirmation that the NNS's utterance has been correctly heard or understood (Pica et al. 1989: 84). Their main function is to provide a model by the speech partners of what they think the NNS is attempting to say (Ellis 1985a, 1990) (see examples 11, 12 and 13 above). The same examples also show that one way of distinguishing between confirmation requests and clarification requests is that the former are often followed by some confirmation marker such as *yes, yeah, no* and the like. (See also Aston 1986: 135-136, for a similar argument.) Pica et al. (1989: 77 ff.) empirically showed that confirmation requests are not as conducive to modification of NNSs' output as clarification requests. For this reason, they are excluded from the present study. As far as other-initiations are concerned, the present study will only investigate those instances which take the form of **clarification requests** or **explicit statements of partial or complete non-understanding.**

Varonis and Gass (1985b: 81-82) argue that there is a special category of other-initiation which they termed "Conversational Continuants." Conversational continuants are defined as utterances whose main function is to keep the conversation going, as in (59):

(59) NS: on the left
NNS: okay on the left
NS: yeah okay (0.9) on the left hand picture
NNS: the left hand picture
NS: yeas
NNS: it's almost in the corner of the shaw
(PD 5: 555-561)

The reason why this particular type of initiation was introduced here is that in many instances a particular exchange is ambiguous with regard to whether it is an example

of a conversational continuant or whether it is an indicator of non-understanding. Chun et al. (1982) and Varonis and Gass (1985b) argue that in some cases it may serve both functions simultaneously, counting *both* as a gentle means of indicating a problem in the conversation and an act of encouragement to the interlocutor to continue. In the present study, whenever an utterance was ambiguous with respect to classification, it was not marked for analysis.

As mentioned earlier, modified comprehensible output can also be studied from other perspectives, such as its **aspects and features** (nativelikeness, systematicity and variability), **the strategies** which NNSs follow in the process of its achievement (e.g., restructuring, paraphrasing, new starts) and its precise **role** in promoting or affecting SLA. It is beyond the limit of this study to look at these aspects of modified comprehensible output, the strategies followed in its realization or its precise role in the development and the processes of SLA. The present study is only designed to look at **NNSs' production of modified comprehensible output** (elicitation and analysis) in the different contexts specified in this study, irrespective of its aspects, the strategies followed in its achievement, or its significance for SLA. The study compares the two mechanisms of the model in terms of their (possibly different) roles in giving NNSs opportunities to modify their production in the direction of modified comprehensible output.

By the same token, although possibly different with regard to aspects and strategies followed in the process of its realization, the outcome of either mechanism of the model may be the production of modified comprehensible output or one or more of the other outcome-types (e.g., failure to repair, appeal, topic-switch, topic-abandonment, etc., See 6.2.1.3 and 6.2.2.3 above). In the present study, only those instances of output which count as modified comprehensible output by NNSs when they attempt to make themselves understood in the TL in response to other-initiations and/or self-initiations will be examined and analyzed in detail.

The other types of outcome do not directly relate to NNSs' production of modified comprehensible output. Pica (1988: 52), for instance, argues that, in examining NNSs' modified comprehensible output, NNSs' appeals for help and subsequent use of other-assistance must be excluded from analysis because these are not targeted towards the NNSs' self-accomplishment of comprehensibility. They reveal more about the ways in which NNSs get their interlocutors to supply them with needed words, sounds and structures, than what NNSs do on their own to exploit their IL resources, modify their production and make their output comprehensible. In the present study, however, all types of outcome will be marked for comparison purposes.

It must be borne in mind that the different categories, variables, aspects, strategies and other outcome-types judged as not relevant and therefore excluded from analysis in this study may be more important than the production of modified comprehensible output for other areas of SLA research and understanding and merit study in their own right. Pica et al. (1989: 84) argue, for example, that confirmation requests may prove to be more important than clarification requests in other areas of SLA, for instance, to the extent that they serve as a source of TL input for the NNS.

6.4 Coding of the Data

All data were coded on the basis of the model proposed earlier. The data were coded/marked for the following categories:

1. A code for **other-initiated clarification requests** in which interlocutors requested clarification, made an explicit statement of non-understanding, or requested explanation, expansion, paraphrase or elaboration;

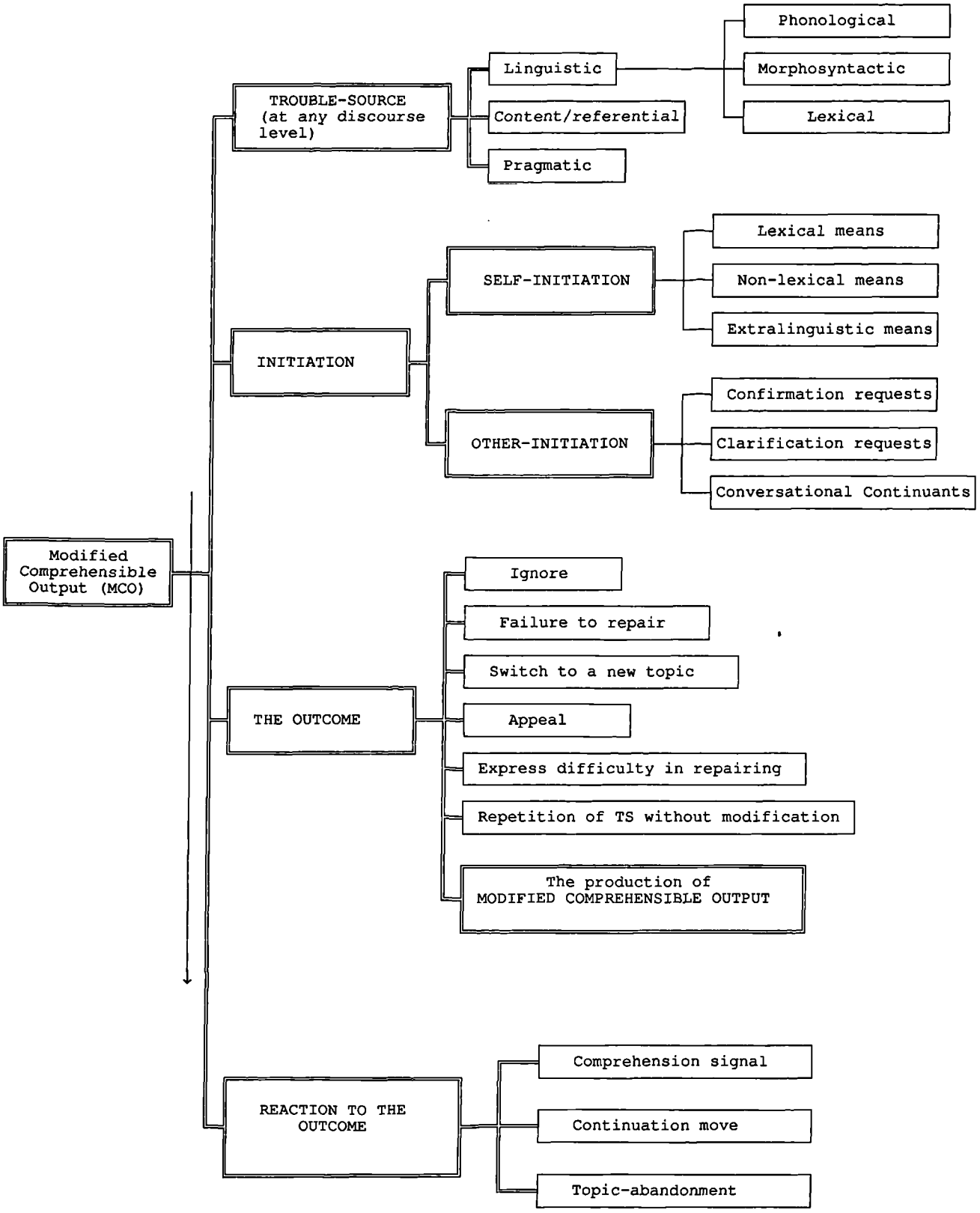
2. A code for **self-initiated clarification attempts** in which NNSs self-initiated an attempt to clarify an utterance or part of an utterance by lexical means, non-lexical means or extralinguistic means[3];

3. Coding NNSs' responses to (1), including coding for the particular outcome-type **(ignoring the signal for repair, failure to repair, appeal, expressing difficulty in repairing, topic-switch, producing modified comprehensible output)**;
4. Coding NNSs' responses to (2), including coding for the particular outcome-type **(failure to repair, appeal, expressing difficulty in repairing/communicating the intended message, topic-switch, producing modified comprehensible output).**

All data were coded for c-units, as defined by Brock et al. (1986), as instances (words, phrases and sentences, grammatical and ungrammatical) which provide linguistic, referential or pragmatic meaning in NS/NNS and NNS/NNS dyadic encounters and group interactions.

The Chart overleaf (Chart 6.1) displays the main primes, categories and subcategories of the model:

Chart 6.1: Primes, categories and subcategories of the modified comprehensible output model: An operational framework for coding and the analysis of data



Notes:

1. Other terminologies used in the literature are the following: For *trouble-source, repairable* was used by the ethnomethodological linguists Schegloff et al. (1977) and Kasper (1985) and *trigger* by Varonis and Gass (1985b), Pica (1988) and Pica et al. (1989). For *initiation, indicator* was used by Varonis and Gass (1985b) and *NS signal of total or partial lack of understanding* by Pica (1988) and Pica et al. (1989). For *outcome, NNS response* was used by Varonis and Gass (1985b), Pica (1988) and Pica et al. (1989). And finally, for *reaction to outcome, reaction to response* was used by Varonis and Gass (1985b), Pica (1988) and Pica et al. (1989).

2. Reaction to outcome will not be discussed in 6.2.2 partly because it was already discussed in the preceding section (6.2.1.4) and partly because it is not relevant to the immediate scope of analysis in this study.

3. Coding for initiations and responses based on extralinguistic means was taken into account only in the task in which video-taping was employed, namely the group decision-making task. Because the study employed only audio-taping in the picture-dictation and opinion-exchange tasks, initiations and responses based on visual cues were not taken into account in the analysis of these two tasks. In addition, in the picture-dictation task the speech partners were sitting back-to-back so that extralinguistic behaviour was not visible to interlocutors.

Chapter Seven

Analysis of Data and Results of Hypothesis Testing

The current Chapter presents the analysis of the data collected to investigate L2 learners' production of modified comprehensible output (MCO) and the results of the study. Data were coded and analyzed in terms of the proposed model described in the previous Chapter (Chapter 6). This Chapter is divided into nine sections. The first section summarizes the distribution of the tasks (this was fully discussed in the methodology Chapter). The second section discusses the methods of analyzing the data and ways of testing the hypotheses employed in this study. In the following six sections, an analysis of each hypothesis will be presented and discussed together with an interpretation of and comments on the findings relating to that particular hypothesis. The last section (section nine) summarizes the findings reported in the preceding 6 sections.

7.1 Distribution of Tasks

For ease of exposition, the distribution of the tasks employed in the study will be restated here (see Chapter 5). Three main tasks constitute the main body of the data: picture-dictation, opinion-exchange and decision-making. The picture-dictation and opinion-exchange tasks were performed in pairs while the decision-making task was performed in groups of non-native speakers (NNS).

In the dyadic encounters, there were 32 pairs distributed among four groups: 8 NS/NNS pairs and 8 NNS/NNS pairs for the picture-dictation task, and 8 NS/NNS pairs and 8 NNS/NNS pairs for the opinion-exchange task. This means that in terms of tasks, data

were gathered from 16 pairs in the picture-dictation task and 16 pairs in the opinion-exchange task. In terms of interactions, there were 16 NS/NNS encounters and 16 NNS/NNS encounters. The decision-making task was administered to two groups of NNSs. The first group consisted of 6 participants and the second of 5.

Altogether, therefore, there are 5 main different types of encounters in the study, as follows:

(1) 8 NS/NNS dyads on the picture-dictation task;
(2) 8 NNS/NNS dyads on the picture-dictation task;
(3) 8 NS/NNS dyads on the opinion-exchange task;
(4) 8 NNS/NNS dyads on the opinion-exchange task;
(5) 2 NNS Groups on the decision-making task.

As mentioned in the methodology Chapter, a systematic selection of 5-minute samples (between minutes 2-6 inclusive) of each audio-taped activity (this applies to dyadic encounters on the picture-dictation and opinion-exchange tasks) was transcribed for analysis. In the group interactions, the length of time was adjusted to take into account the number of speakers. For this reason, 15-minute samples from each video-tape were selected for transcription and analysis.

7.2 Methods of Analysis

The data collected for each hypothesis were analyzed from different perspectives:
(i) In terms of frequencies, proportions and percentages (for all hypotheses),
(ii) In terms of Pearson product moment correlational coefficient analysis (for hypotheses 1, 2, 3, 5 and 6) and
(iii) In terms of significance (for hypotheses 3, 4, 5, and 6).

The first analysis looks at and investigates the frequencies, proportions and percentages of the various aspects of the results, for example, in relation to tasks (picture-dictation

vs opinion-exchange vs decision-making), encounters (dyadic vs group, NS/NNS vs NNS/NNS), initiations (other vs self), types of outcome and the production of modified comprehensible output including its production over one-signal or extended-signal routines. In relation to this perspective, the results will be tabulated, interpreted and discussed when and where necessary.

For the second consideration of the data, Pearson product moment correlation coefficient analysis was used to describe the relationship between two variables or more (e.g, the relationship between other-initiated clarification requests and the production of modified comprehensible output). This coefficient indicates how closely the variables are related. It shows the **conversion rate** between initiation and the production of modified comprehensible output. This analysis will be used to examine the production of MCO by NNSs in relation to other-initiated clarification requests and self-initiated clarification attempts. Hatch and Farhady (1982) describe the test as follows:

> "A +1 correlation coefficient indicates a perfect positive correlation, a -1 correlation indicates a perfect negative correlation, and a zero correlation indicates no relationship between the variables... Therefore, the magnitude of correlation coefficient will vary from -1 to 0 to +1. The greater the value, the stronger the relationship between the two variables" (Hatch and Farhady 1982: 195).

This implies that the magnitude of the correlation analysis indicates how well the two or more sets of scores go together, or the degree of relationship between the sets. In order to be able to show when a relationship is high enough or strong enough to support the hypothesis under examination, the correlation coefficient will be converted into **variance overlap** between the two measures. This enables us to obtain the **common variance** between the two sets of data. (We simply square the correlation coefficient to obtain the common variance (see Hatch and Farhady 1982: 201-202)).

The third type of data analysis in the present study relates to level of significance. Analysis of Variance (ANOVA) Test was used for this end. This test enables us to cross-compare the difference between two or more means. It allows us to compare

several group means simultaneously. It also enables us to decide whether the differences between the means are likely to happen by chance or by treatment (Hatch and Farhady 1982: 128). However, the significance of the test was best described by Ryan, Joiner and Ryan (1985):

> " AOVONEWAY [a one-way-analysis of variance procedure] performs a one-way analysis of variance. The first column contains the sample from the first population (sometimes called the first group or level), the second column contains the sample from the second population, the third column from the third population, and so on. The sample sizes need not be equal" (Ryan et al. 1985: 197).

ANOVA Test tables also show the sample size, sample mean, sample standard deviation and a 95% confidence interval are given for each set (see Ryan et al. 1985: 196-7). ANOVA Test will be used in this study to examine the **quantitative output** by NNSs in relation, for example, to speech partners, type of task, type of outcome, etc. In the present study, the relevant hypotheses were, therefore, tested using the ANOVA Test with the level of significance set at .05.

In the following six sections, an analysis of each hypothesis will be presented and discussed together with an interpretation of and comment on the findings of that particular hypothesis. The analysis will focus on looking at opportunities for NNSs' production of MCO in relation to (1) other-initiated clarification requests (hypothesis 1), (2) self-initiated clarification attempts (hypothesis 2), (3) the differences between other-initiated clarification requests and self-initiated clarification attempts (hypothesis 3), (4) the differences between NS/NNS interaction and NNS/NNS interaction (hypothesis 4), (5) the differences between the type of task (picture-dictation and opinion-exchange) (hypothesis 5), and (6) the differences between dyadic interaction and group interaction (hypothesis 6). The chart overleaf (Chart 7.1) displays the scope of analysis for each hypothesis and sub-hypothesis in relation to initiation and modified comprehensible output production:

Hypothesis No.	Initiation	MCO Production
Hypothesis 1	**Relationship between:**	
	other-initiated clarification requests, and	modified comprehensible output production
Hypothesis 2	**Relationship between:**	
	self-initiated clarification attempts, and	modified comprehensible output production
Hypothesis 3	**Comparing the findings of H1 and H2 with regard to:**	
(a)	initiation opportunities	
(b)		modified comprehensible output production
Hypothesis 4	**Effect of Speech Partner: comparing the effect of NS and NNS speech partners with regard to:**	
(a)	other-initiated clarification requests	
(b)	self-initiated clarification attempts	
(c)		modified comprehensible output production
Hypothesis 5	**Effect of Task: comparing the effect of the picture-dictation and the opinion-exchange tasks as communication tasks with regard to:**	
(a)	Initiation occurrences	
(b)		modified comprehensible output production opportunities
Hypothesis 6	**Effect of Dyadic vs. Group Encounters: comparing the conversion rate between:**	
	initiation opportunities, and	modified comprehensible output production

Chart 7.1: A representation of the scope of analysis for the hypotheses of the study

7.3 Hypothesis One

The first hypothesis predicted that ***other-initiated clarification requests*** **(including explicit statements of non-understanding and requests for explanation, expansion, paraphrase and elaboration) are signals which require NNSs to modify their interlanguage (IL) phonology, morphosyntax and lexis, thereby producing comprehensible output in both NS/NNS and NNS/NNS, dyadic and group encounters.** Following Swain (1985), Brock et al. (1986), Hatch et al. (1986), Pica (1988) and Pica et al. (1989), this hypothesis tests and extends (from NS/NNS to NNS/NNS interaction and from dyadic encounters to group discussions) the assumption

that when NNSs are asked by their speech partners to make themselves understood with regard to an utterance or part of an utterance, they will do so by modifying their output to make it more comprehensible.

To test this hypothesis, Pearson product moment correlation coefficient analysis was conducted between frequencies and proportions of other-initiated clarification requests in c-units (See Ch 6.4 for definition of c-units) across all tasks and the NNSs' production of modified comprehensible output (MCO). **This hypothesis was supported by the results of the study. The results, displayed in Table 7(3.1), show that there is a strong relationship between other-initiated clarification requests and the production of MCO on all tasks when taken together** (correlation coefficient= 0.968, the common variance 0.937).

Table 7(3.1): Correlation coefficient analysis between other-initiated clarification requests and NNSs' production of modified comprehensible output across all tasks

Task	Participants	Correlation Coefficient	Common Variance
Picture-Dictation	NS/NNS	0.726	0.527
	NNS/NNS	0.829	0.687
Both Sets Together		**0.850**	**0.722**[1]
Opinion-Exchange	NS/NNS	0.962	0.925
	NNS/NNS	0.986	0.972
Both Sets Together		**0.974**	**0.948**
Decision-Making	**NNS Groups**	**0.932**	**0.868**
ALL Tasks		**0.968**	**0.937**

Table 7(3.1) also reveals that the magnitude of correlation coefficient varies in relation to task and speech-partner(s) (native vs non-native). Opinion-exchange tasks exhibited the highest common variance (0.948) between other-initiated clarification requests and the production of modified comprehensible output, followed by the decision-making

tasks (0.868) and then by the picture-dictation tasks (0.722). By the same token, NS/NNS interactions on the picture-dictation task exhibited the least common variance (0.527) between other-initiated clarification requests and NNSs' production of modified comprehensible output, followed by NNS/NNS interactions on the same task (0.687). On the opinion-exchange and decision-making tasks, the type of the speech partner(s) appeared not to have real differential effects on the relationship between other-initiated clarification requests and NNSs' production of modified comprehensible output.

These findings show that type of speech partner (NS vs NNS) and task-type affect the strength of relationship between other-initiated clarification requests and NNSs' production of MCO. So, for example, the NNS/NNS interactions on the picture-dictation task provided a higher conversion rate between other-initiation and MCO (common variance 0.687) than NS/NNS interactions on the same task (common variance 0.527). Also, the opinion-exchange task provided a stronger association between other-initiation and MCO (0.948) than the picture-dictation task (0.722). These variables will be examined in full in hypotheses 4 and 5, respectively.

Out of 224 other-initiated clarification requests across all tasks, 181 (or 81%) of the NNSs' responses resulted in producing other-initiated modified comprehensible output (OIMCO). This implies that other outcome-types (i.e., outcomes other than MCO production) constituted 19% (or 43) of the total outcomes. Table 7(3.2) shows the frequencies, proportions and percentages of all types of outcome resulting from other-initiated clarification requests:

Table 7(3.2): Frequencies, proportions and percentages of other-initiated outcomes across all tasks

Task	Participants	No. of Initiations	Types of Outcome															
			Other outcome-Types (Outcomes not Resulting in NNSs' Production of Modified Comprehensible Output)														Modified Compre-hensible Output	
			1		2		3		4		5		6		Total			
			n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Picture-Dictation	NS/NNS	74	0	0	3	4	2	3	3	4	7	9	5	7	12	27	54	73
	NNS/NNS	108	0	0	3	3	5	5	0	0	7	6	2	2	17	16	91	84
Opinion-Exchange	NS/NNS	14	0	0	1	7	0	0	0	0	0	0	0	0	1	7	13	93
	NNS/NNS	16	0	0	1	6	1	6	0	0	1	6	0	0	3	18	13	82
Decision-Making	NNS Groups	12	0	0	2	17	0	0	0	0	0	0	0	0	2	17	10	83
Total		**224**	**0**	**0**	**10**	**5**	**8**	**3**	**3**	**1**	**15**	**7**	**7**	**3**	**43**	**19**	**181**	**81**

1: switch to a new topic, 2:ignore other-initiation, 3: failure to repair, 4: expression of difficulty in repairing, 5:repetition of trouble-source (TS) utterance without modification, 6: insertion of new but not directly relevant information.

Of the 181 cases of successful production of MCO, there were 126 cases (or 70%) in which NNSs responded after one other-signal with a modified version of their utterances which triggered the signal that other-initiated clarification requests had been successfully effected. 55 cases (or 30% of responses) required extended negotiations (two signals or more) for the NNSs to make themselves understood to their speech partners. These results are displayed in Table 7(3.3) below:

Table 7(3.3): NNSs' production of MCO across all tasks: one-signal and extended interaction

Task	Participants	One-signal		Extended Signal		Total
		n	%	n	%	
Picture-Dictation	NS/NNS	44	81	10	19	54
	NNS/NNS	58	64	33	36	91
Opinion-Exchange	NS/NNS	9	69	4	31	13
	NNS/NNS	8	62	5	38	13
Decision-Making	NNS Groups	7	70	3	30	10
Total		**126**	**70**	**55**	**30**	**181**

In proportion to the total responses of NNSs, the 126 single-signal MCO responses constituted 56% and the 55 extended signal MCO responses constituted 25%. These figures are shown in Table 7(3.4) below:

Table 7(3.4): Proportions of other responses, one-signal and extended-signal MCO responses across all tasks in relation to total outcomes of other-initiations

Task	Particip.	Total Initiations	Types of outcome		
			Other Responses n %	One signal MCO n %	Extended signal MCO n %
Picture-Dictation	NS/NNS	74	20 27	44 59	10 14
	NNS/NNS	108	17 16	58 54	33 30
Opinion-Exchange	NS/NNS	14	1 7	9 64	4 29
	NNS/NNS	16	3 18	8 50	5 32
Decision-Making	NNS Groups	12	2 17	7 58	3 25
Total		**224**	**43 19**	**126 56**	**55 25**

In conclusion, the results obtained support the prediction of the hypothesis. The findings show that other-initiated clarification requests (including explicit statements of non-understanding and requests for explanation, expansion, paraphrase and elaboration) offer NNSs frequent opportunities to modify their IL phonology, morphosyntax and lexis, producing thereby comprehensible output in both NS/NNS and NNS/NNS, dyadic and group encounters, opportunities which NNSs actually took. Indeed, there was a strong relationship or conversion rate between other-initiated clarification requests and NNSs' production of MCO.

The findings of this hypothesis are partially consistent with previous research on other-initiated NNSs' production of modified comprehensible output (Holliday 1988, Pica 1988 and Pica et al. 1989). Pica (1988), for example, found that 78% of the total number of NS/NNS negotiated interactions required one signal and 22% required two signals for the NNSs to modify their output. However, she also found that only 52% of the total number of modifications in the one signal negotiated routines were NNS-based adjustments.

As Table 7(3.3) shows, the current study found that NNSs managed to produce their own modified comprehensible output in 181 cases (or 81%) of their total responses to

other-initiated clarification requests. 126 cases (or 70%) of these required one-signal while 55 cases (or 30%) required extended negotiation before the NNSs achieved modified comprehensible output. The differences between the findings of the two studies may be accounted for if we realize that the relative infrequency of NNSs' own modifications in Pica's study should be attributed not to the failure of negotiated interaction to provide a context for NNSs to initiate their own output adjustments, but to several features in the design of the study. These relate to the choice of the NNSs, the NS partners and the set up conditions. Pica et al. (1989: 66) summarize these problems in the studies by Holliday (1988) and Pica (1988) as follows:

> "1. The low L2 proficiency level of the NNSs afforded them a limited linguistic repertoire from which to draw in modifying their output towards comprehensibility when asked to do so by NSs. In view of NNSs' low proficiency the NSs may also have felt reluctant to ask the NNSs to repeat or rephrase their unclear messages and been more inclined toward seeking confirmation of NNSs' intended meanings by supplying learners with target models. 2. The choice of NS interactants who were English as a second language (ESL) teachers familiar with interlanguage production and with classroom feedback conventions provided a biased sample of NSs uniquely adept at supplying learners with target models. 3. The exclusive use of interviews and conversations for data collection set up conditions whereby the NSs could select and control discourse topics. When confronted, therefore, with unclear utterances from the NNSs, the NSs could make reasonable guesses about what the NNSs were trying to tell them and ask for a quick confirmation rather than invite a drawn-out explanation" (Pica et al. 1989: 66).

Since the present study and Pica et al.'s (1989) study took these design considerations into account, it is reasonable to expect the findings of these two studies to be more consistent with each other than with Holliday's (1988) and Pica's (1988) studies mentioned above. In fact, Pica et al. found that 58% of the NNSs' responses to the NSs' clarification requests resulted in the NNSs' self-modified comprehensible output. Since their study did not investigate the proportions of the one-signal versus extended signal modified comprehensible output production, it is not possible to make a close comparison between these types of modified comprehensible output in the present study and Pica et al.'s.

However, it is clear that the findings of this study are more - but not entirely - consistent with Pica et al.'s (1989) study than with the studies mentioned earlier. Nevertheless, there are fairly obvious differences between the findings of the two studies. As mentioned earlier, 58% of other-initiated clarification requests in Pica et al.'s study resulted in NNSs' production of modified comprehensible output, while 81% of other-initiated clarification requests in the present study resulted in NNSs' production of modified comprehensible output. These differences are likely to be due to differences in design, in particular that (i) Pica et al. collected data from 10 NNSs representing one L1 background (Japanese) whereas this study collected data from 27 NNSs representing 13 different L1 backgrounds (See Chapter 5), (ii) Pica et al. collected data from NS/NNS interactions only, whereas this study collected data from NS/NNS and NNS/NNS interactions, (iii) Pica et al. collected data from dyadic encounters while in this study data were collected from both dyadic encounters and group interactions and (iv) most importantly, Pica et al.'s collected data from low-intermediate and mid-intermediate proficiency level NNSs, whereas this study collected data from mid-intermediate and high-intermediate proficiency level NNSs. These differences in design and data collection are bound to have their effects on the results of the study. (See in particular hypotheses 4 and 6 for confirmation of the effect of these differences.) It can be argued, therefore, that the findings of the current study are neither entirely consistent nor notably inconsistent with the findings of the limited number of comparable previous studies. However, with the differences of data collection and design in mind, the findings of the current study may be argued to be more representative, valid and reliable than the findings of previous studies.

7.4 Hypothesis Two

Hypothesis 2 predicted that ***self-initiated clarification attempts*** **by NNSs exhibit modifications of IL phonology, morphosyntax and lexis and thereby result in comprehensible output in both NS/NNS and NNS/NNS dyadic and group encounters.** This hypothesis was motivated by close ethnomethodological observations

of NS/NS interactions (Schegloff et al. 1977, Schegloff 1979), NS/NNS interactions (Gaskill 1980, Chun et al. 1982, Day et al. 1984, and Brock et al. 1986) and NNS/NNS interactions (Schwartz 1980, Kasper 1985) which demonstrate that self-initiation of repair in most cases leads to successful repair or modified comprehensible output.

To test this hypothesis, correlation coefficient analysis was conducted between frequencies and proportions of self-initiated clarification attempts in c-units across all tasks and NNSs' production of MCO. **This hypothesis was also supported by the results of the study. The results, displayed in Table 7(4.1) below, show that there is a very strong relationship between self-initiations and the production of MCO across all tasks** (correlation coefficient= 0.976, common variance 0.952).

Table 7(4.1): Correlation coefficient analysis between self-initiated clarification attempts and NNSs' production of modified comprehensible output across all tasks

Task	Participants	Correlation Coefficient	Common Variance
Picture-Dictation	NS/NNS	0.887	0.786
	NNS/NNS	0.962	0.925
Both Sets Together		**0.931**	**0.866**
Opinion-Exchange	NS/NNS	0.960	0.920
	NNS/NNS	0.993	0.986
Both Sets Together		**0.979**	**0.958**
Decision-Making	**NNS Groups**	**0.996**	**0.992**
ALL Tasks		**0.976**	**0.952**

Table 7(4.1) shows that the variation in the magnitude of correlation coefficient with regard to the speech partner(s) and/or the task is less diverse than the relationship between other-initiated clarification requests and the production of modified comprehensible output (cf. hypothesis 1). This implies that the production of modified

comprehensible output as the result of self-initiated clarification attempts is less affected by the task and the speech partner(s) than the production of modified comprehensible output as the result of other-initiated clarification requests.

This means that although both initiation types (other and self) resulted in high magnitude of NNS production of MCO, self-initiated clarification attempts resulted in a consistently higher magnitude of association (conversion rate) between initiation and modified comprehensible output than other-initiated clarification attempts. I will also return to this point in discussing the findings of hypotheses 1 and 2 at the end of this section, and under hypothesis 3.

With regard to task, decision-making tasks exhibited the highest common variance (0.992) between self-initiated clarification attempts and the production of modified comprehensible output, followed by the opinion-exchange tasks (0.958) and then by the picture-dictation tasks (0.866). This means that group decision-making tasks provided NNSs with a higher conversion rate between self-initiated clarification attempts and MCO than the other two tasks. I will also return to this point under hypothesis 6, when it will be discussed in more detail.

With regard to speech partners, NS/NNS encounters on the picture-dictation task exhibited the least common variance (0.786) between self-initiated clarification attempts and the production of modified comprehensible output, followed by NS/NNS interactions on the opinion-exchange tasks (0.920). NNS/NNS dyadic and group interactions exhibited the least differential effect on the relationship between self-initiated clarification attempts and the production of modified comprehensible output. This means that NNS/NNS dyadic and group interactions provided NNSs with opportunities to achieve a higher magnitude of association between self-initiated clarification attempts and modified comprehensible output than NS/NNS contexts. The effect of speech partner will be discussed in more detail under hypothesis 4.

Out of 535 self-initiated clarification attempts on all tasks, 496 cases (or 93%) of the NNSs' responses resulted in producing self-initiated modified comprehensible output (SIMCO). This implies that other outcome-types (i.e., outcomes which did not result in MCO production) constituted only 7% (or 39 non-MCO outcomes) of the total outcomes. Table 7(4.2) shows the frequencies, proportions and percentages of all types of outcome which came as the result of self-initiated clarification attempts:

Table 7(4.2): Frequencies, proportions and percentages of self-initiated outcomes across all tasks

Task	Participants	No. of Initiations	Types of Outcome													
			Other outcome-Types (Outcomes not Resulting in NNSs' Production of Modified Comprehensible Output)												Modified Comprehensible Output	
			1		2		3		4		5		Total			
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
Picture-Dictation	NS/NNS	115	4	3	1	1	7	6	1	1	0	0	13	11	102	89
	NNS/NNS	117	3	3	0	0	3	3	2	2	0	0	8	8	109	92
Opinion-Exchange	NS/NNS	97	4	4	3	3	1	1	0	0	0	0	8	8	89	92
	NNS/NNS	106	4	4	0	0	0	0	0	0	0	0	4	4	102	96
Decision-Making	NNS Groups	100	3	3	0	0	2	2	1	1	0	0	6	6	94	94
Total		535	18	3	4	1	13	2	4	1	0	0	39	7	496	93

1: failure to repair, 2: appeal (direct and indirect), 3: expression of difficulty in communicating or repairing the intended message, 4: repetition of trouble-source (TS) utterance without modification, 5: switch to a new topic.

Of the 496 cases of successful production of MCO, there were 383 cases (or 77%) in which the NNSs succeeded after one attempt to produce a modified version of their utterances which triggered a signal of successful self-initiated clarification. 113 cases (or 23% of responses) required extended or lengthy moves (two moves or more) for the speakers to make themselves understood to their speech partners. These results are displayed in Table 7(4.3) below:

Table 7(4.3): NNSs' production of MCO across all tasks: The one-move MCO vs the extended move MCO

Task	Participants	One-move		Extended move		Total
		n	%	n	%	
Picture-Dictation	NS/NNS	82	80	20	20	102
	NNS/NNS	81	74	28	26	109
Opinion-Exchange	NS/NNS	70	79	19	21	89
	NNS/NNS	84	82	18	18	102
Decision-Making	NNS Groups	66	70	28	30	94
Total		**383**	**77**	**113**	**23**	**496**

In proportion to the total responses, the 383 single-move MCO responses constituted 72% and the 113 extended move MCO responses constituted 21%. These figures are shown in Table 7(4.4) below:

Table 7(4.4): Proportions of other responses, one-move and extended-move MCO across all tasks in relation to total outcomes of self-initiations

Task	Participants	Total Initiations	Types of Outcome					
			Other Responses		One signal MCO		Extended signal MCO	
			n	%	n	%	n	%
Picture-Dictation	NNS/NS	115	13	11	82	70	20	18
	NNS/NNS	117	8	8	81	69	28	23
Opinion-Exchange	NS/NNS	97	8	8	70	72	19	20
	NNS/NNS	106	4	4	84	79	18	17
Decision-Making	NNS Groups	100	6	6	66	66	28	28
	Total	**535**	**39**	**7**	**383**	**72**	**113**	**21**

In conclusion, the results obtained support the prediction of the hypothesis. The findings reveal that self-initiated clarification attempts by NNSs offer them considerable opportunities to modify their IL phonology, morphosyntax and lexis in the direction of comprehensible output in both NS/NNS and NNS/NNS, dyadic and group encounters, opportunities which NNSs actually took. Indeed, there was a very strong relationship or conversion rate between self-initiated clarification attempts and NNSs' production of MCO.

Since there are no comparable studies which have investigated NNSs' production of self-initiated modified comprehensible output, it is not possible to place and compare the findings relating to this hypothesis with those of other studies. However, it is well established that in NS/NS interactions (Schegloff et al. 1977, Schegloff 1979), in NS/NNS interactions (Gaskill 1980, Chun et al. 1982, Day et al. 1984, and Brock et al. 1986) and in NNS/NNS interactions (Schwartz 1980 and Kasper 1985) self-initiated clarification attempts systematically lead to successful repair. The findings of this hypothesis provide empirical support for these positions which themselves underlie the current hypothesis. It was indeed found that self-initiated clarification attempts by NNSs significantly resulted in their production of modified comprehensible output. 93% of

self-initiated clarification attempts did result in the NNSs' production of adjusted comprehensible output across all tasks, while 7% resulted in other outcome-types (e.g., failure to repair, appeal for help, expression of difficulty in communicating or repairing the intended message, repetition of the original trouble-source or part of it without modification - see Table 7(4.2)).

To sum up so far, section 3 and section 4 reported the findings of the first hypothesis and the second hypothesis respectively. The findings show that both other-initiated clarification requests (hypothesis 1) and self-initiated clarification attempts (hypothesis 2) result in NNSs' production of modified comprehensible output. However, the magnitude of association between initiation and MCO was higher with regard to self-initiated clarification attempts and MCO (common variance 0.952) than other-initiated clarification requests and MCO (common variance 0.937). This means that self-initiated clarification attempts result in a higher magnitude of association with MCO than other-initiated clarification requests.

The following hypothesis will test differences in opportunities between other- and self-initiations and differences in opportunities between NNSs' production of other-initiated modified comprehensible output and their production of self-initiated modified comprehensible output.

7.5 Hypothesis Three

Hypothesis 3 predicted that **the frequency of utterances exhibiting modification in NNS IL phonology, morphosyntax and lexis as the result of self-initiated clarification attempts will be greater than those which come as the result of other-initiated clarification requests, specifically:**

(a) There will be greater frequency of self-initiated clarification attempts, and

(b) There will be greater frequency of MCO as the result of self-initiated clarification attempts than of other-initiated clarification requests.

Like hypothesis 2, this hypothesis was also motivated in part by close ethnomethodological observations of NS/NS interactions (Schegloff et al. 1977, Schegloff 1979), research on NS/NNS interactions (Gaskill 1980, Chun et al. 1982, Day et al. 1984, Brock et al. 1986) and on NNS/NNS interactions (Schwartz 1980, Kasper 1985) which assert that the organization of conversation favours self-initiation of repair over other-initiation (prediction 3 (a)). Moreover, these researchers have also maintained (see Ch 3.2) that self-initiations of repair regularly lead to successful self-repair whether in same-turn, transitional space-turn or in third turn (prediction 3 (b)).

To test this hypothesis, frequencies and proportions of other-initiated clarification requests were compared to frequencies and proportions of self-initiated clarification attempts on all tasks, and frequencies and proportions of successful modified comprehensible output as the result of other-initiated clarification requests were compared to frequencies and proportions of successful modified comprehensible output as the result of self-initiated clarification attempts on all tasks.

7.5.1 Hypothesis Three (a)

The first part of hypothesis 3 predicted that **the frequencies of self-initiated clarification attempts will be greater than those of other-initiated clarification requests.** To test this prediction, frequencies and proportions of other-initiated clarification requests were compared to frequencies and proportions of self-initiated clarification attempts on all tasks. ANOVA (Analysis of variance) Test was conducted on both types of initiations. **The results showed that this prediction was supported. There were significant differences between other-initiated clarification requests and self-initiated clarification attempts ($F= 28.43$, $df= 1/78$, $p<.05$ for all cases across all tasks) in the direction of self-initiated clarification attempts.** The results of this hypothesis are shown in Tables 7(5.1) and 7(5.2).

Table 7(5.1): Frequencies and proportions of other-initiated clarification requests and self-initiated clarification attempts across all tasks

Task	Participants	Other-initiated Clarification Requests		Self-initiated Clarification Attempts		Total
		n	%	n	%	
Picture-Dictation	NS/NNS	74	39	115	61	189
	NNS/NNS	108	48	117	52	225
Opinion-Exchange	NS/NNS	14	14	97	86	111
	NNS/NNS	16	13	106	87	122
Decision-Making	NNS Groups	12	11	100	89	112
Total		**224**	**30**	**535**	**70**	**759**

This Table shows that there is a total of 759 initiations, 224 of which (or 30% of the total) were other-initiated, whereas 535 of which (or 70% of the total) were self-initiated. It is obvious, as such, that the occurrence of self-initiated clarification attempts is significantly higher than that of other-initiated clarification requests.

It is worth pointing out that Table 7(5.1) also enables us to compare NSs and NNSs as potential clarification request initiators. It clearly shows that at least on one task, the picture-dictation, NNS partners made more frequent clarification requests (108) than NS partners (74). Differences of effect of NS and NNS partners with regard to initiation opportunities will be examined fully under hypothesis 4 (a). At the same time, the Table also reveals the effect of task. Picture-dictation places a particular emphasis on successful comprehension of each separate information unit of the discourse and for this reason it is not surprising that other-initiated clarification requests are more frequent here than on the other two tasks. The effect of task with regard to initiation will be examined in full under hypothesis 5 (a).

Table 7(5.2): Comparison of other-initiated clarification requests and self-initiated clarification attempts across all tasks

Task	Participants	F Value	df	Probability
Picture-Dictation	NS/NNS	10.40	1/14	p<.05
	NNS/NNS	0.43	1/14	ns
Both Sets Together		**6.20**	**1/30**	**p<.05**
Opinion-Exchange	NS/NNS	31.66	1/14	p<.05
	NNS/NNS	22.75	1/14	p<.05
Both Sets Together		**55.32**	**1/30**	**p<.05**
Decision-Making	**NNS Groups**	**6.15**	**1/14**	**p<.05**
All Tasks		**28.43**	**1/78**	**p<.05**

Table 7(5.2) shows that of all comparisons, in one situation only (NNS/NNS interaction on the picture-dictation task) the difference between other- and self-initiations never achieved the required level of significance (F=0.43, df= 1/14, ns). On this task, there were 108 other-initiated clarification requests and 117 self-initiated clarification attempts. This means that on this particular task, NNS partners requested clarifications almost as frequently as the NNSs' own self-initiated clarification attempts. However, when the differences between other- and self-initiations were taken together across NS/NNS and NNS/NNS interactions on the same task, the differences were significant (F=6.20, df= 1/30, p<.05). This means that this significant difference was primarily due to differences between other- and self-initiation in NS/NNS encounters and not in NNS/NNS encounters on the picture-dictation task.

In total, the results of testing hypothesis 3 (a) support the prediction that the frequencies of self-initiated clarification attempts will be greater than those of other-initiated clarification requests. It was actually found that the occurrence of self-initiated clarification attempts was significantly greater than that of other-initiated clarification requests.

The findings of this prediction provide empirical validation for observations of NS/NS interactions (Schegloff et al. 1977, Schegloff 1979), NS/NNS interactions (Gaskill 1980, Chun et al. 1982, Day et al. 1984, Brock et al. 1986) and NNS/NNS interaction and demonstrate that the organization of conversation favours self-initiated over other-initiated repair. According to Schegloff et al. (1977: 366-7), for instance, self-initiated repairs may occupy three positions in a conversational exchange (same-turn, transitional space and third turn) whereas other-initiation occupies one place (the turn immediately subsequent to the trouble-source turn). This placement organization was claimed to give the speaker of the trouble-source substantially more opportunities for self-initiated clarification leading to repair. The findings of hypothesis 3 (a) that there are statistically significant differences between the proportions of self-initiated clarification attempts and other-initiated clarification requests ($F=28.43$, $df= 1/78$, $p<.05$) in the direction of self-initiation are consistent with these arguments. As Table 7(5.1) shows, 70% of the total initiation requests/attempts across all tasks were self-initiated whereas 30% were other-initiated.

Part (a) of the present hypothesis examined the difference in frequencies between other-initiated clarification requests and self-initiated clarification attempts. However, the main objective of hypothesis 3 is to examine the possibly different effects of each initiation-type on NNSs' production of modified comprehensible output. Hypothesis 3 (b) was specified for this particular objective.

7.5.2 Hypothesis Three (b)

The second part of hypothesis 3 predicted that **the frequency of utterances exhibiting modification in NNS IL phonology, morphosyntax and lexis as the result of self-initiated clarification attempts will be greater than those which come as the result of other-initiated clarification requests.** To test this prediction, frequencies and proportions of successful modified comprehensible output as the result of other-initiated clarification requests were compared to frequencies and proportions of successful modified comprehensible output as the result of self-initiated clarification attempts on

all tasks. **ANOVA (Analysis of Variance) Test showed that this prediction was also supported. There were significantly higher opportunities for NNSs to produce MCO as the result of self-initiation than other-initiation (F=37.73, df= 1/78, p<.05 for all cases across all tasks).** The results of this prediction are shown in Tables 7(5.3) and 7(5.4) below:

Table 7(5.3): Frequencies and proportions of successful MCO as the result of other-initiated clarification requests and self-initiated clarification attempts across all tasks

Task	Participants	Other-initiated MCO		Self-initiated MCO		Total
		n	%	n	%	
Picture-Dictation	NS/NNS	54	35	102	65	156
	NNS/NNS	91	45	109	55	200
Opinion-Exchange	NS/NNS	13	13	89	87	102
	NNS/NNS	13	11	102	89	115
Decision-Making	NNS Groups	10	10	94	90	104
Total		**181**	**27**	**496**	**73**	**677**

This Table shows that there is a total of 677 MCO occurrences, 181 of which (or 27% of the total) resulted from other-initiated clarification requests, whereas 496 of which (or 73% of the total) resulted from self-initiated clarification attempts. It is obvious from these figures that NNSs' production of MCO as the result of self-initiated clarification attempts is significantly higher than their production of MCO as the result of other-initiated clarification requests.

Table 7(5.3) also enables us to compare NS and NNS interlocutors for their differential effect on NNSs' production of MCO. The Table clearly shows that at least on one task, the picture-dictation, NNSs produced a greater proportion of self-initiated MCO occurrences when their speech partners were NNSs (91) than when they were NSs (54). These differences will be examined fully under hypothesis 4 (b). At the same time, the Table also reveals the effect of task. There are more occurrences of other-initiated MCO on the picture-dictation tasks than the opinion-exchange or decision-making tasks. The

effect of task with regard to the production of modified comprehensible output will be examined in full under hypotheses 5 and 6.

Table 7(5.4): Comparison of outcome of other-initiated clarification requests with outcome of self-initiated clarification attempts which provided NNSs with opportunities to produce MCO

Task	Participants	F Value	df	Probability
Picture-Dictation	NS/NNS	19.57	1/14	p<.05
	NNS/NNS	1.63	1/14	ns
Both Sets Together		**11.18**	**1/30**	**p<.05**
Opinion-Exchange	NS/NNS	28.59	1/14	p<.05
	NNS/NNS	24.99	1/14	p<.05
Both Sets Together		**54.93**	**1/30**	**p<.05**
Decision-Making	**NNS Groups**	**5.91**	**1/14**	**p<.05**
All Tasks		**37.73**	**1/78**	**p<.05**

Table 7(5.4) shows that of all comparisons, in one situation only (NNS/NNS interactions on the picture-dictation task) the difference between other-initiated modified comprehensible output and self-initiated modified comprehensible output did not achieve the required level of significance (F= 1.63, df= 1/14, ns). On this task, there were 91 other-initiated MCO occurrences and 109 self-initiated MCO occurrences. (This also implies that on this particular task, the proportion of MCO occurrences as the result of NNS other-initiated clarification requests is greater than those of other-initiated clarification requests on other tasks.) However, when the differences between other-initiated modified comprehensible output and self-initiated modified comprehensible output were taken together across NS/NNS and NNS/NNS interactions on the same task, the differences were significant (F=11.18, df= 1/30, p<.05). This means that this significant difference was primarily due to differences between the frequencies of SIMCO and OIMCO productions in NS/NNS encounters and not in NNS/NNS encounters on the picture-dictation task.

In sum, the results of testing hypothesis 3 (b) support the prediction that the frequency of utterances exhibiting modification in NNS IL phonology, morphosyntax and lexis as the result of self-initiated clarification attempts will be greater than those which come as the result of other-initiated clarification requests. It was actually found that there were significantly greater opportunities for NNSs to produce MCO as the result of self-initiated clarification attempts than as a result of other-initiated clarification requests.

The findings of prediction 3 (b) are closely related to those of 3 (a) and to the observations of NS/NS, NS/NNS and NNS/NNS interactions mentioned above which demonstrate that the organization of conversation not only favours self-initiation of repair over other-initiation (prediction (a)) but also that self-initiated clarification attempts regularly lead to successful modified comprehensible output. Since self-initiation of repair is significantly more frequent and is favoured over other-initiation (findings of prediction (a)), NNSs have greater opportunities to produce modified comprehensible output by performing self-initiated adjustments than by producing modified comprehensible output as the result of other-initiated clarification requests. Therefore the findings of this prediction, that **there are significant differences between the frequency of other-initiated modified comprehensible output and self-initiated modified comprehensible output ($F= 37.73$, $df= 1/78$, $p<.05$) in the direction of self-initiated modified comprehensible output**, provide empirical support for these assumptions. As Table 7(5.3) showed, 73% of the total cases of adjusted comprehensible output across all tasks resulted from self-initiated clarification attempts whereas 27% resulted from other-initiated clarification requests.

There is another way of looking at the relationship between initiation and MCO. This has to do with whether or not one type of initiation more typically leads to successful MCO production than the other in relation to initiation. For this reason, the findings obtained so far were considered from this perspective. The ratio between one type of initiation and successful MCO production was compared to the other. As displayed in Table 7(5.5) below, 70% of the total initiations on all tasks were self-initiated and only

30% were other-initiated. The Table also shows that 73% of the total MCO production on all tasks resulted from self-initiations, whereas only 27% resulted from other-initiations. Viewed from another perspective, self-initiations resulted in MCO in 93% of cases (with a common variance of 0.952), whereas other-initiations resulted in MCO in 81% of cases (with a common variance of 0.937) (See also the findings of hypotheses 1 and 2).

Table 7(5.5): The ratio between each type of initiation and its successful modified comprehensible output production

Source of Initiation	Total Initiations			MCO Production			Correlation Coefficient	Common Variance
	Total	n	%	Total	n	%		
Other	759	224	30	677	181	27	0.968	0.937
Self		535	70		496	73	0.976	0.952

It is clear from the Table that the conversion rate between self-initiations and MCO is marginally higher (0.952) than that between other-initiations and MCO (0.937). The conclusion which can be drawn from this is that the frequencies of self-initiated clarification attempts are not only significantly greater quantitatively than those of other-initiated clarification requests, but also result in a higher association between initiation and MCO production.

To summarize, hypothesis 3 tested frequency of occurrences of other-initiated clarification requests and self-initiated clarification attempts (prediction (a)) and the differential effects of each of these initiation-types on the NNSs' production of adjusted comprehensible output (prediction (b)). It was shown that the frequency of occurrence of self-initiated clarification attempts is not only significantly higher than that of other-initiated clarification requests ($F= 28.43$, $df= 1/78$, $p<.05$), but also that self-initiated clarification attempts lead to a significantly higher proportion of modified comprehensible output than other-initiated clarification requests ($F =37.73$, $df= 1/78$, $p<.05$). In other words, it is not only the case that 70% of the total initiations on all tasks were self-initiated and only 30% were other-initiated, but also that self-initiations

resulted in MCO in 93% of cases (with a common variance of 0.952), whereas other-initiations resulted in MCO in 81% of cases (with a common variance of 0.937).

Looking at the findings so far, we get the following picture: Both other-initiated clarification requests (hypothesis 1) and self-initiated clarification attempts (hypothesis 2) lead to NNSs' production of modified comprehensible output. Furthermore, it was shown that the proportion of occurrence of self-initiated clarification attempts is not only *quantitatively* significantly higher than of other-initiated clarification requests (hypothesis 3 (a)), but also that self-initiated clarification attempts lead *quantitatively* to a significantly higher proportion of modified comprehensible output than other-initiated clarification requests (hypothesis 3 (b)). The results also revealed that the conversion rate between NNSs' self-initiated clarification attempts and their production of MCO is higher than between other-initiated clarification requests and NNSs' MCO production. This also suggests that self-initiated clarification attempts are more valuable than other-initiated clarification requests for the production of MCO. In a nutshell, it was empirically shown that **NNSs' self-initiated modified comprehensible output production is favoured over other-initiated modified comprehensible output production both in relation to the number of opportunities and the conversion rate it provides NNSs with to produce modified comprehensible output.**

The pedagogical implication is that - at least with intermediate to high-intermediate proficiency level learners - self-initiated clarification attempts must be considered a more preferred classroom activity than other-initiated clarification requests on the three communication tasks employed in this study because they give learners significantly more opportunities to self-initiate clarification and produce MCO. I will return to this point in the implications Chapter (section 3.2).

The following hypothesis examines the effect of the speech partner on (a) other-initiated clarification requests, (b) self-initiated clarification attempts and (c) NNSs' production of modified comprehensible output.

7.6 Hypothesis Four

Hypothesis 4 predicted that **NNS/NNS interactions provide more opportunities for modification towards comprehensible output than NS/NNS interactions, specifically:**

(a) They provide a greater proportion of other-initiated clarification requests;

(b) They result in a greater proportion of self-initiated clarification attempts;

(c) There will be a greater proportion of NNS modification of IL phonology, morphosyntax and lexis in the direction of comprehensible output.

This hypothesis was motivated by studies by Varonis and Gass (1985a,b) and Gass and Varonis (1985a,b, 1986) who consistently argued that NNS/NNS interactions provide greater opportunities than NS/NNS interactions for the negotiation of meaning and therefore for receiving comprehensible input. The assumption is that a greater amount of negotiation takes place in NNS/NNS discourse than in either NS/NS or NS/NNS discourse. In NNS/NNS interactions, NNSs do not lose face by negotiating meaning in the same way as they might in NS/NNS interactions (Varonis and Gass 1985b: 84-86). The hypothesis was also motivated in part by a theoretical claim by Pica et al. (1989: 84) who argue that negotiated interaction is our vital source of research data because this enables us to identify ways in which learners and interlocutors work together in producing comprehensible input and comprehensible output.

This hypothesis is tested in the picture-dictation and opinion-exchange tasks only since it is only in these tasks that both NS/NNS and NNS/NNS dyadic interaction data were obtained. To test the hypothesis, frequencies and proportions of other-initiated clarification requests, self-initiated clarification attempts and opportunities for producing comprehensible output across the picture-dictation and opinion-exchange tasks were compared to test if NNS/NNS dyadic interactions actually provided NNSs with more opportunities for modification towards comprehensible output than NS/NNS dyadic interactions.

7.6.1 Hypothesis Four (a)

The first part of the hypothesis predicted that **NNS/NNS interactions provide a greater proportion of other-initiated clarification requests than NS/NNS interactions.** To test this prediction, frequencies and proportions of NS other-initiations were compared to frequencies and proportions of NNS other-initiations on the same task. **This prediction was partially supported by the results. There were no significant differences between the total proportion of NS other-initiations and NNS other-initiations on the picture-dictation task and the opinion-exchange task when taken together (F=1.31, df= 1/30, ns).** However, a level of significance was achieved on the picture-dictation task when taken alone (F=8.45, df= 1/14, $p<.05$) showing that the proportions of NNS other-initiated clarification requests were greater than those of NS other-initiated clarification requests on this particular task. These results are shown in Tables 7(6.1) and 7(6.2):

Table 7(6.1): Comparison of NS other-initiations and NNS other-initiations on the picture-dictation and opinion-exchange tasks

Task	F Value	df	Probability
Picture-Dictation	8.46	1/14	$p<.05$
Opinion-Exchange	0.06	1/14	ns
Both Tasks Together	**1.31**	**1/30**	**ns**

Table 7(6.2): Frequencies and proportions of NS other-initiations and NNS other-initiations on the picture-dictation and opinion-exchange tasks

Task	Participants	No. of Other-initiations
Picture-Dictation	NS/NNS	74
	NNS/NNS	108
Opinion-Exchange	NS/NNS	14
	NNS/NNS	16
Total		**212**

Table 7(6.2) shows that there is a total of 212 other-initiated clarification requests across both tasks, 124 (108 + 16) or 58% of which were initiated by the NNS partners whereas 88 (74 + 14) or 42% were initiated by the NS partners.

Although the difference between the two types of initiation when taken across both tasks did not achieve the level of significance, it is quite clear that NNS other-initiated clarification requests were more frequent than NS other-initiated clarification requests (58% vs 42%). This implies that NNS partners did actually provide a greater proportion of other-initiated clarification requests than NS partners, despite the fact that the differences were not statistically significant.

This finding provides further empirical evidence for Varonis and Gass's (1985b) demonstration that NNS/NNS interactions provide NNSs with sounder contexts to negotiate meanings than NS/NNS interactions. The finding revealed that NNS/NNS interactions provided a greater proportion of other-initiated clarification requests than NS/NNS interactions. The most probable explanation is that due to their comparatively limited L2 knowledge, NNS partners, unlike NS partners, requested a greater proportion of clarification. More specifically, this might reflect the lack of shared vocabulary and the slow processing of the TL utterances by NNSs. The implications of this finding for SLA research and second/foreign language pedagogy will be mentioned and commented on in the implications Chapter.

7.6.2 Hypothesis Four (b)

The second part of the hypothesis predicted that **NNS/NNS interactions provide a greater proportion of self-initiated clarification attempts than NS/NNS interactions.** To test this prediction, frequencies and proportions of self-initiations in NS/NNS encounters were compared to frequencies and proportions of self-initiations in NNS/NNS. **This prediction was not supported by the results. There were no significant differences between the total proportion of self-initiations in the NS/NNS encounters and self-initiations in the NNS/NNS encounters on the picture-dictation task and the opinion-exchange tasks when taken together** (F=0.17, df= 1/30, ns) **and/or when looked at separately** (F=0.02, df= 1/14, ns for the picture-dictation tasks, and F=0.16, df= 1/14, ns for opinion-exchange task). The results of this prediction are shown in Tables 7(6.3) and 7(6.4):

Table 7(6.3): Comparison of self-initiations in NS/NNS encounters and self-initiations in NNS/NNS encounters on the picture-dictation and opinion-exchange tasks

Task	F Value	df	Probability
Picture-Dictation	0.02	1/14	ns
Opinion-Exchange	0.16	1/14	ns
Both Tasks Together	**0.17**	**1/30**	**ns**

Table 7(6.4): Frequencies and proportions of self-initiations in NS/NNS encounters and self-initiations in NNS/NNS encounters on the picture-dictation and opinion-exchange tasks

Task	Participants	No. of Self-initiations
Picture-Dictation	NS/NNS	115
	NNS/NNS	117
Opinion-Exchange	NS/NNS	97
	NNS/NNS	106
Total		**435**

Table 7(6.4) shows that there is a total of 435 self-initiated clarification attempts across all tasks, 223 (117 + 106) or 51% were self-initiated by NNSs when their speech partners were NNSs, and 212 (115 + 97) or 49% were self-initiated by NNSs when their speech partners were NSs. Unlike the findings of part (a) of the present hypothesis, this finding exhibits no real statistical or observational differences in the performance of NNSs with regard to self-initiation in both types of encounters. The occurrences of self-initiated clarification attempts are almost evenly distributed between the two types of encounters. This suggests that the occurrence of self-initiated clarification attempts is less likely to be affected by the type of the speech partner (be it NS or NNS) than that of other-initiated clarification requests.

Unlike prediction 4 (a) which was partly based on previous research, no existing research investigated the frequency of occurrence of self-initiated clarification attempts in NS/NNS vs NNS/NNS encounters. For this reason, it will not be possible to compare the findings of prediction 5 (b) with those of other research.

So far the findings reveal (i) other-initiated clarification requests were in only one of three comparisons more frequent in NNS/NNS interactions than NS/NNS interactions (see Table 7(6.1)) and (ii) self-initiated clarification attempts were almost evenly distributed between the two types of encounters. Looking at the findings of predictions 4 (a) and 4 (b) together, the following conclusion may be drawn: self-initiated clarification attempts, unlike other-initiated clarification requests, are not only consistent in terms of their distribution between NS/NNS and NNS/NNS encounters, but also occur in higher frequencies across all tasks (See also hypothesis 3).

The first two parts of hypothesis 4 relate to initiation type and frequency in NS/NNS and NNS/NNS contexts. However, the most important part of the hypothesis relates to the possible association of speech partners with NNS production of modified comprehensible output. This is the motivation underlying the third part of hypothesis four.

7.6.3 Hypothesis Four (c)

The final part of hypothesis 4 predicted that **NNS/NNS interactions would provide a greater proportion of NNSs modification of their IL phonology, morphosyntax and lexis in the direction of comprehensible output than NS/NNS interactions.** To test this prediction, frequencies and proportions of NNSs' production of MCO in NS/NNS encounters were compared to their production of MCO in NNS/NNS encounters. **ANOVA Test showed that there were no significant differences between NNSs' production of MCO in NS/NNS interactions and NNS/NNS interactions across both tasks (picture-dictation and opinion-exchange) and all initiation-sources (other- and self-) when all these variables were taken together (F=1.52, df= 1/62, ns).** These findings are displayed in Tables 7(6.5) and 7(6.6) below:

Table 7(6.5): Frequencies of modified comprehensible output in relation to task and source of initiated modified comprehensible output

Task	Type of MCO	Participants	No. of MCOs
Picture Dictation	Other	NS/NNS	54
		NNS/NNS	91
	Self	NS/NNS	102
		NNS/NNS	109
Opinion Exchange	Other	NS/NNS	13
		NNS/NNS	13
	Self	NS/NNS	89
		NNS/NNS	102
Total Modified Comprehensible Output Productions			**573**

MCO: modified comprehensible output

Table 7(6.6): Comparison of the effect of NS/NNS vs NNS/NNS interactions on the production of modified comprehensible output across all variables together

Task	Type of MCO	F Value	df	Probability
PD	Other	20.17	1/14	p<.05
OE	Other	0.00	1/14	ns
PD	Self	0.20	1/14	ns
OE	Self	0.35	1/14	ns
ALL Variables Together		**1.52**	**1/62**	**ns**

PD: picture-dictation
OE: opinion-exchange

Table 7(6.6) above shows there are no significant differences between the two types of encounters in all comparisons (but one) when taken separately or when taken together. Nevertheless, the first case, which deals with the occurrence of NS other-initiated modified comprehensible output and NNS other-initiated modified comprehensible output on the picture-dictation task, achieved a level of significance (F= 20.17, df= 1/14, p<.05). Overall, the result shows that the type of the speech partner (NS vs NNS) had no significant effects on the NNSs' production of modified comprehensible output, either with regard to other-initiated MCO production, or self-initiated MCO production.

Altogether, the findings of hypothesis 4 so far show that there are minimal differences of effect between NSs and NNSs as speech partners. Apart from two cases, other-initiated clarification requests (in 4 (a)) and other-initiated modified comprehensible output on the picture-dictation task (in 4 (c)), no statistically significant differences were found between the two types of encounters.

One of the basic motivations underlying the hypothesis under consideration is that NNS/NNS interactions involve more negotiation of meaning than NS/NNS interactions (See above). With this in mind, it was believed that NNS/NNS interactions would exhibit greater proportions of extended negotiation of meaning (two signals or more)

in the production of adjusted comprehensible output than NS/NNS interactions. Based on these assumptions, further analyses were conducted to see if there were any significant differences between the two types of encounters with regard to one-signal modified comprehensible output production versus extended negotiations.

As can be noticed from Table 7(6.5) above, there are 573 cases of NNS production of modified comprehensible output. 315 cases (or 55%) resulted from NNS/NNS interactions and 258 cases (or 45%) resulted from NS/NNS interactions. This further investigation showed that in NS/NNS interactions there are 205 cases of one-signal negotiations and in NNS/NNS interactions there are 231 cases of one-signal negotiations. ANOVA Test shows that there are no significant differences between the proportions of these encounters (F= 0.44, df= 1/62, ns). However, this latest investigation also shows that in NS/NNS interactions there are 53 cases of extended negotiations while in NNS/NNS interactions there are 84 cases of extended negotiations. ANOVA Test shows that there are significant differences in the proportions of extended negotiations between the two contexts (F= 5.39, df= 1/62, p<.05). Table 7(6.7) below displays the distribution of these signals.

Table 7(6.7): Frequencies, proportions and percentages of one-signal and extended negotiation of comprehensible output production in relation to NS/NNS and NNS/NNS encounters

Participants	Task	Type of MCO	One-Signal		Extended-Signal		Total
			n	%	n	%	
NS/NNS Interactions	Picture-Dictation	Other	44	81	10	19	54
		Self	82	80	20	20	102
	Opinion-Exchange	Other	9	69	4	31	13
		Self	70	82	19	18	89
Total			205	79	53	21	258
NNS/NNS Interactions	Picture-Dictation	Other	58	64	33	36	91
		Self	81	74	28	26	109
	Opinion-Exchange	Other	8	62	5	38	13
		Self	84	82	18	18	102
Total			231	73	84	27	315

This finding shows that in NNS/NNS interactions, a significantly greater amount of extended negotiation takes place than in NS/NNS interactions for the production of comprehensible output. This implies that NNS/NNS interactions not only provide NNSs with an opportunity to receive input which they have made comprehensible through negotiation (Varonis and Gass 1985b: 87), but also that they provide them with greater opportunities for extended negotiated interaction to produce **comprehensible output** than NS/NNS interactions. The possible explanations for this finding are (i) that NNS/NNS interactions provide NNSs with a non-threatening forum within which to practise developing language skills, experiment with new structures and forms and expand their IL resources, and (ii) because there is no NS to rely upon as an authority who will significantly contribute to reducing the amount of negotiation of meaning, a higher degree of negotiated interaction will take place.

In total, therefore, the findings of the fourth hypothesis lend only partial support to the assumption that NNS/NNS interactions provide better contexts for other-initiations, self-initiations and for producing comprehensible output than NS/NNS interactions. This partial support was found in that other-initiations and other-initiated modified comprehensible output were more frequent in NNS/NNS interactions than in NS/NNS interactions on the picture-dictation task only, and in contexts which relate to extended negotiations. On the other hand, there were no significant differences between NS/NNS and NNS/NNS interactions with regard to (i) other-initiated clarification requests on the opinion-exchange task, (ii) self-initiated clarification attempts on both tasks, (iii) the production of MCO on all tasks but one (other-initiated modified comprehensible output on the picture-dictation task) and (iv) one-signal MCO production.

This hypothesis was intended to test NNSs production of MCO in NS/NNS and NNS/NNS encounters. It does not relate to testing these encounters as potential contexts for the provision of comprehensible input as was the case with Varonis and Gass (1985a,b) and Gass and Varonis (1985a,b, 1986). Therefore it will not be possible to compare the findings of this hypothesis directly with those of previous studies. Nevertheless, the findings reveal that a greater amount of extended negotiation takes

place in NNS/NNS encounters than in NS/NNS encounters, which therefore gives NNSs modestly greater opportunities to negotiate meaning and produce comprehensible output.

The findings of the present hypothesis also provide empirical validation for Pica et al.'s (1989: 84) theoretical conclusion that

> "...we note that as we continue to identify ways in which learners and their interlocutors work together in producing comprehensible input and comprehensible output, it is becoming increasingly clear that negotiated interaction is our most vital source of research data. Through the study of negotiation, what is emerging is an understanding and appreciation of what both learners and interlocutors contribute to the SLA process."

It was indeed found that through negotiated interactions (between NSs and NNSs or NNSs and NNSs), NNSs or L2 learners were able to modify their interlanguage utterances in the direction of comprehensible output.

The conclusion one can draw from the findings of this and relevant previous findings is the following: NNS/NNS interactions provide NNSs with more appropriate contexts than NS/NNS interactions for **the negotiation of meaning** which will enable them to receive a greater amount of comprehensible input and to produce (extended) modified comprehensible output.

The following two hypotheses will test the effect of task-type (hypothesis 5) and the effect of dyadic versus group interaction (hypothesis 6) on NNSs' production of modified comprehensible output.

7.7 Hypothesis Five

Hypothesis 5 predicted that **opportunities for the production of utterances exhibiting modification in NNS IL phonology, morphosyntax and lexis as a result of self- and**

other-initiations would be greater on the picture-dictation task than on the opinion-exchange task in both NS/NNS and NNS/NNS encounters, specifically:
(a) There will be greater frequency of initiations, and
(b) There will be greater opportunities for MCO production on the picture-dictation task than on the opinion-exchange task.

Following Pica et al. (1989: 74), this hypothesis was believed to reflect the degree of NNS control over the amount of information needed for successful task completion and the precision with which this information needed to be employed (see also Ch 5.2). In other words, the assumption is that since successful completion of the picture-dictation task, unlike the opinion-exchange task, depends heavily on the production of accurate and comprehensible output, this requires NNSs to be as comprehensible and as precise as possible in performing the task. This is the basis of the prediction that there will be more frequent other- and self-initiations and greater opportunities to produce MCO on the picture-dictation task than on the opinion-exchange task.

7.7.1 Hypothesis Five (a)

The first part of hypothesis 5 predicted that **there will be greater frequency of initiations on the picture-dictation task than the opinion-exchange task.** To test this prediction, the effect of task-type on initiation was examined by comparing the total frequencies of other-initiated clarification requests and self-initiated clarification attempts on each task. **ANOVA Test shows that there are significant differences in opportunities for initiation on each task ($F= 16.72$, $df= 1/62$, $p<.01$) such that the picture-dictation task provided greater opportunities for initiations than the opinion-exchange task.** These results are displayed in Table 7(7.1) below:

Table 7(7.1): Frequencies of initiations on the picture-dictation and opinion-exchange tasks

Task	Initiations		Total	F Value	df	Probability
	n	%				
Picture-Dictation	414	64	**647**	16.72	1/62	p<.01
Opinion-Exchange	233	36				

Table 7(7.1) shows that the picture-dictation task provided significantly more frequent initiation occurrences than the opinion-exchange task. As can be seen from the Table, there is a total of 647 initiation occurrences, 414 cases (or 64% of the total) were made on the picture-dictation task whereas 233 cases (or 36% of the total) were made on the opinion-exchange task. This result shows that the picture-dictation task provided quantitatively greater opportunities to request or attempt clarification than the opinion-exchange task.

Further analyses were conducted to find out if the type of initiation (other- or self-) played any role in bringing about these significant differences in initiation opportunities between the two tasks. Examining the effect of other-initiated clarification requests showed that there were significant differences (F= 86.81, df= 1/30, p<.001) in the frequencies of other-initiated clarification requests between the two tasks as shown in Table 7(7.2) below:

Table 7(7.2): Difference in opportunities for other-initiated clarification requests between the picture-dictation task and opinion-exchange task

Task	OICRs		Total	F Value	df	Probability
	n	%				
Picture-Dictation	182	86	**212**	86.81	1/30	p<.001
Opinion-Exchange	30	14				

OICRs: Other-initiated clarification requests.

Table 7(7.2) shows that there is a total of 212 cases of other-initiated clarification requests, 182 cases (or 86%) of these were made on the picture-dictation task whereas 30 cases (or 14%) were made on the opinion-exchange task. It is worth noting that although the level of significance adopted for the present study was .05, here the difference between the opportunities provided by the tasks was significant at the level of .001. This implies that there are very significant differences in the opportunities each task offers speech partners to request clarifications.

Examining the occurrence of self-initiated clarification attempts showed no difference between the two tasks (F=1.24, df= 1/30, ns) as shown in Table 7(7.3) below:

Table 7(7.3): Difference in opportunities for self-initiated clarification attempts between the picture-dictation task and the opinion-exchange task

Task	SICAs		Total	F Value	df	Probability
	n	%				
Picture-Dictation	232	53	435	1.24	1/30	ns
Opinion-Exchange	203	47				

SICAs: Self-initiated clarification attempts.

Table 7(7.3) shows that there is a total of 435 cases of self-initiated clarification attempts, 232 cases (or 53% of the total) were made on the picture-dictation task and 203 cases (or 47% of the total) were made on the opinion-exchange task. This means that self-initiated clarification attempt occurrences were almost evenly distributed between the two tasks.

The findings of hypothesis 5 (a) therefore show that there are significant differences in the total occurrences of initiations between the picture-dictation task and the opinion-exchange task in favour of the picture-dictation task. Further analyses revealed that

these significant differences were mainly due to differences in frequencies of other-initiated clarification requests on each task and not self-initiated clarification attempts.

So far the findings of this hypothesis show that there are statistically significant differences in the total occurrences of initiations between the two tasks in favour of the picture-dictation task. However, the main objective of this hypothesis is to test the effect of each task on NNSs' production of MCO which will enable us to see the quantity of opportunity for successful MCO production on each task. This is the specific objective of hypothesis 5 (b).

7.7.2 Hypothesis Five (b)

Part two of the present hypothesis predicted that **opportunities for the production of utterances exhibiting modification in NNS IL phonology, morphosyntax and lexis would be greater on the picture-dictation task than on the opinion-exchange task.** In the light of the results of hypothesis 5 (a) above, it is reasonable to expect significant differences between the two tasks in terms of the opportunities each task offers NNSs to modify their production in the direction of comprehensible output.

To examine this prediction, frequencies of NNSs' production of modified comprehensible output on the picture-dictation task were compared to their production on the opinion-exchange task. **The results show that there are significant differences in the amount of opportunities for the production of modified comprehensible output between the two tasks ($F=10.30$, $df= 1/62$, $p<.05$) such that the picture-dictation task provided greater opportunities for the production of modified comprehensible output than the opinion-exchange task.** These results are displayed in Table 7(7.4) below:

Table 7(7.4): Frequencies of MCO on the picture-dictation and opinion-exchange tasks

Task	Production of MCO		Total	F Value	df	Probability
	n	%				
Picture-Dictation	356	62	**573**	10.30	1/62	p<.05
Opinion-Exchange	217	38				

Table 7(7.4) shows that picture-dictation task provided significantly more frequent opportunities for the production of modified comprehensible output than opinion-exchange task. As can be seen from the Table, there is a total of 573 occurrences of NNSs' production of modified comprehensible output, 356 cases (or 62% of the total) were provided by the picture-dictation task whereas 217 cases (or 38% of the total) were provided by opinion-exchange task. This result shows that the picture-dictation task provided quantitatively greater opportunities for the production of modified comprehensible output than the opinion-exchange task.

Further analyses were conducted to find out if the type of modified comprehensible output (other-initiated vs self-initiated) played any role in bringing about these significantly more frequent opportunities for the production of modified comprehensible output on the picture-dictation task. Examining the effect of other-initiated modified comprehensible output showed that there were significant differences (F=73.47, df= 1/30, p<.001) in the frequencies of other-initiated modified comprehensible output between the two tasks, as shown in Table 7(7.5) below:

Table 7(7.5): Difference in opportunities for other-initiated MCO between the picture-dictation task and opinion-exchange task

Task	Production of OIMCO		Total	F Value	df	Probability
	n	%				
Picture-Dictation	145	85	**171**	73.47	1/30	p<.001
Opinion-Exchange	26	15				

OIMCO: Other-initiated modified comprehensible output.

The Table shows that there is a total of 171 cases of other-initiated modified comprehensible output opportunities, 145 cases (or 85%) of these were provided by the picture-dictation task whereas 26 cases (or 15%) were provided by the opinion-exchange task. Again, it is worth noting that although the level of significance adopted for the present study was .05, here we have another case in which the difference between the opportunities provided by the tasks was significant at the level of .001. This also implies that there are very significant differences in the opportunities each task provided NNSs with in the direction of modifying their output.

Opportunities for self-initiated modified comprehensible output on each task were examined. The results showed no difference between the picture-dictation task and the opinion-exchange task (F=0.58, df= 1/30, ns) as shown in Table 7(7.6) below:

Table 7(7.6): Difference in opportunities for self-initiated MCO between the picture-dictation task and the opinion-exchange task

Task	Production of SIMCO		Total	F Value	df	Probability
	n	%				
Picture-Dictation	211	52	402	0.58	1/30	ns
Opinion-Exchange	191	48				

SIMCO: Self-initiated modified comprehensible output.

The Table shows that there is a total of 402 cases of self-initiated modified comprehensible output, 211 cases (or 52% of the total) provided by the picture-dictation task and 191 cases (or 48% of the total) provided by the opinion-exchange task. This means that the occurrence of self-initiated MCO production is also almost evenly distributed between the two tasks.

The findings of hypothesis 5 (b) therefore show that there are differences in the total opportunities each task provided to produce MCO, such that the picture-dictation task provided significantly greater opportunities than the opinion-exchange. Further analyses revealed that these significant differences were mainly due to differences in opportunities for other-initiated MCO on each task and not self-initiated MCO production. Indeed, these findings were expectable since it was already shown in 5 (a) that the picture-dictation task offered significantly greater occurrences of clarification requests/attempts than the opinion-exchange task.

Yet, further analysis was carried out to examine if there were differences between the tasks in terms of the one-signal and extended signal negotiated modified comprehensible output. ANOVA Test shows that the picture-dictation task offered significantly greater proportions of extended negotiation for the production of MCO than the opinion-exchange task ($F= 12.57$, $df= 1/62$, $p<.05$). As can be seen in Table 7(7.7) below, the

results show that the picture-dictation task exhibited a higher percentage of extended negotiations (26%) as a proportion of the total number of modified comprehensible output occurrences than the opinion-exchange task (20%).

Table 7(7.7): Frequencies and percentages of one-signal and extended-signal modified comprehensible output on the picture-dictation and opinion-exchange tasks

Task	One-Signal (move)		Extended Signal (move)		Total
	n	%	n	%	
PD	265	74	91	26	**356**
OE	167	80	43	20	**210**

A more detailed breakdown of this analysis is given in Table 7(7.8) below:

Table 7(7.8): Frequencies and percentages of one-signal and extended-signal modified comprehensible output on the picture-dictation and opinion-exchange tasks

Task	Participants	Type of MCO	One-signal (move)		Extended Signal (move)		Total
			n	%	n	%	
PD	NS/NNS	Other	44	81	10	19	54
	NNS/NNS	Other	58	64	33	36	91
	NS/NNS	Self	82	80	20	20	102
	NNS/NNS	Self	81	74	28	26	109
Totals			**265**	**74**	**91**	**26**	**356**
	NS/NNS	Other	9	69	4	31	13
OE	NNS/NNS	Other	8	62	5	38	13
	NS/NNS	Self	70	79	19	21	89
	NNS/NNS	Self	84	82	18	18	102
Totals			**167**	**80**	**43**	**20**	**210**

Tables 7(7.7) and 7(7.8) show that there are 91 extended negotiations on the picture-dictation task and 43 on the opinion-exchange task. (The Tables also show that 80% of the total occurrences of modified comprehensible output in the opinion-exchange task required one-signal, and 74% of the total occurrences of modified comprehensible output in the picture-dictation task required one-signal.) These findings suggest that when successful completion of the task primarily depends on the NNSs' production of accurate and comprehensible output (as in the case of picture-dictation), a significantly higher proportion of extended negotiation of information units occurs.

Another way of looking at the difference between the two tasks is to examine any difference in the ratio of relationship between other- and self-initiations and the production of MCO. This enables us to look at MCO in relation to initiation (i.e., the conversion rate from other- and self-initiations to successful MCO) for each task. Pearson product moment correlation coefficient analysis was conducted to test the degree of relationship between initiations and adjusted comprehensible output on each task. The results of correlational analyses are shown in Table 7(7.9) below:

Table 7(7.9): correlation coefficient analysis between initiations and MCO on the picture-dictation task and opinion-exchange task

Task	Correlation Coefficient	Common Variance
Picture-Dictation	0.906	0.820
Opinion-Exchange	0.992	0.984

The Table reveals that there are differences between the two tasks such that opinion-exchange activities resulted in higher proportions of modified comprehensible output in relation to other- and self-initiation (common variance 0.984) than picture-dictation activities (common variance 0.820). Another way of looking at the Table is to see it as demonstrating that it is more difficult to make oneself comprehensible to the addressee

on the picture-dictation task than on the opinion-exchange task in relation to initiation. Put differently, the Table shows that MCO is more likely to be regarded as satisfying the hearer once it is initiated in the opinion-exchange task than in the picture-dictation task. In comparison to the results gathered above with regard to this hypothesis, this result reveals that although the picture-dictation task offered significantly greater opportunities to initiate clarifications and to produce MCO than the opinion-exchange task, the latter created contexts in which NNSs can produce a higher ratio of MCO in relation to the number of initiation opportunities.

To sum up the main findings of hypothesis five. The results of the analysis provide full support for the hypothesis. The findings show that there are differences in the amount of opportunity each task provided NNSs with (i) to initiate clarification and (ii) to produce MCO. The picture-dictation task provided significantly greater opportunities than the opinion-exchange task. It was also shown that these significant differences were primarily due to the differences in occurrence of other-initiated clarification requests (Table 7(7.2)) and other-initiated modified comprehensible output (Table 7(7.5)) on both tasks. The occurrence of self-initiated clarification attempts (Table 7(7.3)) and self-initiated modified comprehensible output (Table 7(7.6)) were not significantly different between the two tasks. With regard to the status/significance of self-initiation and self-completion of clarifications, this means that self-initiated clarification attempts and self-initiated MCO are not only favoured over other-initiated clarification requests and other initiated MCO (hypothesis 3), but also that they are more constant (or consistent) across tasks (i.e., they are less affected by task-type than other-initiated clarification requests and/or other-initiated MCO production).

Differences between the two tasks were also found in relation to the one-signal and extended signal MCO production. The picture-dictation task exhibited a significantly greater occurrence of extended negotiated MCO than the opinion-exchange task. On the other hand, when the differences between the two tasks were tested in relation to the conversion rate between initiation and MCO production, the opinion-exchange task provided a higher magnitude of conversion than the picture-dictation task, possibly

because a higher level of understanding or comprehension accuracy is required in the picture-dictation task (where one is required to draw what is communicated) than in the opinion-exchange task.

Pica et al. 1989 also investigated the effect of task-type on initiation opportunities and NNSs' production of modified comprehensible output. They found that the picture-dictation (i.e., information-gap) task "offered the largest percentage....of NS signals of requests for clarification and confirmation" in comparison to discussion and jigsaw tasks (Pica et al. 1989: 74). In this respect, the findings of hypothesis 5 (a) provided further confirmation for Pica et al.'s finding that a picture-dictation task offers significantly greater occurrences of other-initiated clarification requests than an opinion-exchange task in both NS/NNS and NNS/NNS interactions.

On the other hand, the findings of hypothesis 5 (b) were not consistent with Pica et al.'s (1989) study, which investigated the effect of task-type on the amount of opportunity each task offers NNSs with for the production of MCO. Pica et al. found that the "the tasks in which NNSs participated [picture-dictation, discussion and jigsaw tasks] did not have a significant effect on their modification of their output" (Pica et al. 1989: 77). Contrary to Pica et al.'s findings, the results of hypothesis 5 (b) reveal that the picture-dictation task did provide NNSs with significantly greater opportunities to produce MCO than the opinion-exchange task in both NS/NNS and NNS/NNS interactions.

In fact, Pica et al.'s second finding was unexpected because, as described above, they also found that the picture-dictation task offered the largest percentage of NS signals of requests for clarification and confirmation in comparison to discussion and jigsaw tasks (Pica et al. 1989: 74). Indeed, Pica et al. were themselves surprised to get this result:

> "The absence of significant effect for task was surprising since we had predicted that NNS control over information would be shared with NS during the jigsaw and discussion tasks but would persist throughout the

> information-gap task, and that this would influence the signal-response pattern of our participants" (Pica et al. 1989: 78).

The findings which relate to the total occurrences of self-initiated clarification attempts and self-initiated MCO are new. The present investigation showed that task type played no significant role in affecting the frequency of self-initiated clarification attempts and self-initiated MCO production. This study shows that the occurrence of these is consistently high on both tasks in comparison to other-initiated clarification requests and other-initiated MCO occurrences. Further confirmation of these results awaits future research findings.

The last hypothesis (hypothesis 6) will examine the effect of group versus dyadic interaction on NNSs' production of modified comprehensible output.

7.8 Hypothesis Six

This hypothesis marks a departure from previous research which has investigated the NNSs' production comprehensible output. It compares the role of group interaction and dyadic interaction in NNSs production of MCO. It predicted that **the conversion rate between initiation (self- and other-) and utterances exhibiting modification in NNS IL phonology, morphosyntax and lexis will be higher in encounters between groups of NNSs than in dyadic encounters.** In other words, the assumption underlying this hypothesis is that although individual opportunities to talk may be less frequent in group discussion than in dyadic interactions, the possibility of the NNSs' production of modified comprehensible output in relation to the number of opportunities arising in the respective task will be higher in the group discussion task than in dyadic encounters. The main reason for this assumption is that in group interactions, a speaker is typically addressing several parties, which is hypothesized to place additional demands on him/her to be more comprehensible to the interlocutors than in one-to-one interaction (see Ch 5.2).

There are several motivations underlying the hypothesis: First, it was motivated in part by the need to confirm the findings of the earlier research which investigated the role of interaction and the negotiation of meaning in dyadic and group interactions conducted by Long and Porter (1985), Pica and Doughty (1985) and Doughty and Pica (1986), who demonstrated that no significant differences were observed between dyadic and group interaction in providing more negotiated interactions and receiving more *comprehensible input.* Doughty and Pica, for example, found that their hypothesis that "...more modified interactions would occur in the dyad situation than in the group situation" was not borne out (Doughty and Pica 1986: 316). This hypothesis seeks to find out if there are differences between dyadic interaction and group interaction with regard to the negotiation of meaning for the production of MCO. Second, group discussion is a common talk-type and therefore it will be important to test its effect on NNSs' production of modified comprehensible output. And third, it is worthwhile extending the findings of existing research on the production of modified comprehensible output from dyadic encounters to group interactions because they might enable use to obtain findings with pedagogical implications with regard to the significance of group and pair work in second/foreign language teaching classrooms.

To test this hypothesis, correlation coefficient analyses were conducted between frequencies and proportions of other- and self-initiations taken together on each task and the NNSs' production of modified comprehensible output on that particular task. **This hypothesis was partially supported by the results of the study. Correlation coefficient analysis showed that the proportions of other- and self-initiations more positively correlated with the production of modified comprehensible output on the decision-making tasks than on the picture-dictation tasks but were not so different for group decision-making and dyadic opinion-exchange tasks, as shown in Tables 7(8.1), 7(8.2) and 7(8.3) below:**

Table 7(8.1): Comparison of correlation coefficient analysis of other- and self-initiations vs the production of MCO across tasks

Task	Correlation Coefficient	Common Variance
PD	0.906	0.820
OE	0.992	0.984
DM	0.996	0.992

A more detailed breakdown analysis of Table 7(8.1) is given in Table 7(8.2) below:

Table 7(8.2): Comparison of correlation coefficient analysis between initiation and NNSs' production of Modified comprehensible output in relation to type of initiation, speech partner and task

Task	Participants	Type of Initiation	Corr. Coef.	Common Variance
Picture-Dictation	NS/NNS	Other	0.762	0.527
		Self	0.887	0.786
	NNS/NNS	Other	0.829	0.687
		Self	0.962	0.925
ALL Correlations on the PD Task			**0.906**	**0.820**
Opinion-Exchange	NS/NNS	Other	0.962	0.925
		Self	0.960	0.920
	NNS/NNS	Other	0.986	0.972
		Self	0.993	0.986
ALL Correlations on the OE Task			**0.992**	**0.984**
Decision-Making	NNS Groups	Other	0.932	0.868
		Self	0.996	0.992
ALL Correlations on the DM Task			**0.996**	**0.992**

It is clear from the Table that decision-making tasks exhibited the highest magnitude of common variance between initiation and the production of modified comprehensible output (0.992), closely followed by opinion-exchange tasks (0.984) and finally by the picture-dictation tasks (0.820). This finding shows that opportunities for other-initiated

clarification requests and self-initiated clarification attempts might be less frequent on the decision-making task than the other two tasks, nevertheless, each opportunity was more likely to lead to the production of MCO.

In terms of frequencies, proportions and percentages, there was a total of 414 other- and self-initiations on the picture-dictation task, 356 cases (or 86% of the total) resulted in MCO; a total of 233 other- and self-initiations on the opinion-exchange task, 217 cases (or 92% of the total) resulted in MCO; and a total of 112 other- and self-initiations on the decision-making task, with 104 cases (or 93% of the total) resulting in MCO. These figures are displayed in Table 7(8.3) below:

Table 7(8.3): Frequencies, proportions and percentages of comprehensible output production in relation to all types of initiation, encounters and tasks

Task	Participants	Type of MCO	Total	Outcome			
				Other Responses		MCO	
				n	%	n	%
Picture-Dictation	NS/NNS	Other	74	20	27	54	73
		Self	115	13	11	102	89
	NNS/NNS	Other	108	17	17	91	84
		Self	117	8	8	109	92
All Initiations on the PD Task			**414**	**58**	**14**	**356**	**86**
Opinion-Exchange	NS/NNS	Other	14	1	7	13	93
		Self	97	8	8	89	92
	NNS/NNS	Other	16	3	18	13	82
		Self	106	4	4	102	96
ALL Initiations on the OE Task			**233**	**16**	**8**	**217**	**92**
Decision-Making	NNS Groups	Other	12	2	17	10	83
		Self	100	6	6	94	94
ALL Initiations on the DM Task			**112**	**8**	**7**	**104**	**93**

To summarize so far, when all the variables are taken together, the findings show that the decision-making task did lead to a marginally higher association between initiation

and MCO than the other two tasks, in particular in comparison with the picture-dictation task.

Further analysis was carried out to see if these differences were related to certain types of initiation (other- or self-). First the effect of other-initiation was examined. The findings showed that the opinion-exchange task exhibited the highest level of association between other-initiation and NNSs' production of modified comprehensible output (0.948) followed by the decision-making task (0.868) and finally the picture-dictation task (0.722). These results are displayed in Tables 7(8.4) and 7(8.5) below:

Table 7(8.4): Comparison of correlation coefficient analysis between other-initiation and NNSs' production of modified comprehensible output across tasks

Task	Correlation Coefficient	Common Variance
Picture-Dictation	0.850	0.722
Opinion-Exchange	0.974	0.948
Decision-Making	0.932	0.868

There is a total of 182 other-initiated clarification requests on the picture-dictation task, a total of 30 other-initiated clarification requests on the opinion-exchange task and a total of 12 other-initiated clarification requests on the decision-making task. As can be seen from Table 7(8.5) below, out of 182 other-initiations on the picture-dictation task, NNSs managed to produce modified comprehensible output in 145 cases (or 80%), out of 30 initiations on the opinion-exchange task, they managed 26 cases (or 87%), and of the 12 initiations on the decision-making task, they managed 10 cases (or 83%). (It must be cautioned that 12 cases is very small number on which to make a judgement.)

Table 7(8.5): Frequencies, proportions and percentages of comprehensible output production in relation to other-initiation

Task	Other-Initiations	Total of Outcome			
		Others		MCO	
		n	%	n	%
PD	182	37	20	145	80
OE	30	4	13	26	87
DM	12	2	17	10	83

This finding shows that it was not other-initiated clarification requests which made the magnitude of the relationship between initiation and modified comprehensible output higher on the decision-making task than on the other two tasks. Indeed, as Tables 7(8.4) and 7(8.5) show, when other-initiated clarification requests are taken alone, the opinion-exchange task provided a higher magnitude of relationship between initiation and MCO than the other two tasks.

With this in mind, the effect of self-initiated clarification attempts was examined. The findings show that decision-making tasks exhibited the highest level of association between self-initiation and NNSs' production of modified comprehensible output (0.992) followed by opinion-exchange tasks (0.958) and finally picture-dictation tasks (0.866). The results which indicate this finding are displayed in Tables 7(8.6) and 7(8.7) below:

Table 7(8.6): Comparison of correlation coefficient analysis between self-initiation and NNSs' production of modified comprehensible output across tasks

Task	Correlation Coefficient	Common Variance
Picture-Dictation	0.931	0.866
Opinion-Exchange	0.979	0.958
Decision-Making	0.996	0.992

There is a total of 232 self-initiated clarification attempts on the picture-dictation task, a total of 203 self-initiated clarification attempts on the opinion-exchange task and a total of 100 self-initiated clarification attempts on the decision-making task. As can be seen from Table 7(8.7) below, out of 232 self-initiations on the picture-dictation task, NNSs managed to produce modified comprehensible output in 211 cases (or 91%), out of 203 self-initiations on the opinion-exchange task, they managed 191 cases (or 93%), and of the 100 self-initiations on the decision-making task, they managed 94 cases (or 94%).

Table 7(8.7): Frequencies, proportions and percentages of comprehensible output production in relation to self-initiation

Task	Self-Initiations	Total of Outcome			
		Others		MCO	
		n	%	n	%
PD	232	21	9	211	91
OE	203	12	7	191	93
DM	100	6	6	94	94

This finding shows that the conversion rate between self-initiated clarification attempts and NNSs' production of MCO reached a higher level of positive association in group interaction than in dyadic encounters. This suggests that self-initiated clarification attempts were primarily responsible for the very slight increase in the strength of the relationship between initiation and NNSs' production of modified comprehensible output in group interaction compared to that in dyadic encounters.

Further analysis was carried out to examine if there were differences between the extent to which the tasks led to one-signal and extended signal negotiated modified comprehensible output. As can be seen in Tables 7(8.8) and 7(8.9) below, the results show that the decision-making task exhibited the highest percentage of extended negotiations leading to modified comprehensible output on the particular task (30%),

followed by the picture-dictation task (26%) and finally the opinion-exchange task (20%). ANOVA Test showed that there are no significant differences in the means of extended negotiations between the group interaction task and the picture-dictation task (F= 0.73, df= 1/43, ns). Also no *statistically* significant differences were found in the means of extended negotiations between the group interaction task and the opinion-exchange task (F= 3.92, df= 1/43, ns). However, the F value in the latter test (i.e., F= 3.92) was close enough to the level of significance (p<4.06) for the differences to be distinct if not actually significant.

Table 7(8.8): Frequencies, proportions and percentages of one-signal and extended-signal modified comprehensible output across all tasks

Task	One-Signal		Extended Signal		Total
	n	%	n	%	
PD	265	74	91	26	356
OE	167	80	43	20	210
DM	73	70	31	30	104

A more detailed breakdown of this analysis is given in Table 7(8.9) overleaf:

Table 7(8.9): Frequencies, proportions and percentages of one-signal and extended-signal modified comprehensible output across all tasks (detailed Table)

Task	Participants	Type of MCO	One-signal		Extended Signal		Total
			n	%	n	%	
PD	NS/NNS	Other	44	81	10	19	54
	NNS/NNS	Other	58	64	33	36	91
	NS/NNS	Self	82	80	20	20	102
	NNS/NNS	Self	81	74	28	26	109
Totals			**265**	**74**	**91**	**26**	**356**
OE	NS/NNS	Other	9	69	4	31	13
	NNS/NNS	Other	8	62	5	38	13
	NS/NNS	Self	70	79	19	21	89
	NNS/NNS	Self	84	82	18	18	102
Totals			**167**	**80**	**43**	**20**	**210**
DM	NNS Groups	Other	7	70	3	30	10
	NNS Groups	Self	66	70	28	30	94
Totals			**73**	**70**	**31**	**30**	**104**

Tables 7(8.8) and 7(8.9) also reveal that with regard to one-signal (move) MCO production, opinion-exchange tasks exhibited the highest proportion (80%), followed by picture-dictation tasks (74%) and finally decision-making tasks (70%).

The pattern revealed in these comparisons shows that group interactions involved a greater proportion of extended negotiation than dyadic encounters, particularly in comparison with the opinion-exchange task, although not at a statistically significant level. This finding can also be interpreted to support the main assumption on which hypothesis 6 is based, namely, a speaker in a group interaction is addressing several interlocutors with different personal, linguistic and cultural backgrounds, factors which are likely to put additional demands on him/her to be more comprehensible than in dyadic interaction. Indeed, a greater proportion of extended negotiations for the production of MCO was found in group interactions than in dyadic interactions. Moreover, this finding may relate to the type of task, in particular that decision-making

is a + convergent task where every participant must contribute because only unanimous decisions must be reached. Therefore, accurate and comprehensible output are requirements for its successful completion. This may also explain why the picture-dictation (+ convergent) task resulted in more extended negotiated routines than the opinion-exchange (- convergent) task although both were performed in pairs (See the findings of hypothesis 5). In plainer terms, there were more extended negotiated routines on the decision-making task in comparison with the picture-dictation - although both are + convergent tasks - primarily due to the effect of number of participants (pair vs group). Moreover, there were yet many more extended negotiated routines on the decision-making task in comparison with the opinion-exchange partly due to the effect of task type (+ convergent vs - convergent, respectively), and partly due to the effect of number of participants (pair vs group). Considering the effect of the number of speech partners coupled with the effect of the type of task, it is possible, therefore, to account for the finding why more extended negotiated routines occurred in group decision-making task than in the opinion-exchange and picture-dictation dyadic tasks.

To sum up, hypothesis 6 predicted that the conversion rate between initiation (self- and other-) and utterances exhibiting modification in NNS IL phonology, morphosyntax and lexis would be higher in encounters between groups of NNSs than in dyadic encounters. The results lend only very limited support to this prediction. As predicted, the magnitude of relationship between initiation and NNSs' production of modified comprehensible output was higher for the group interaction task than for the dyadic interaction tasks. But the differences were very small indeed. The findings also reveal that the consistently high proportions of self-initiated modified adjustments are primarily responsible for these differences. The hypothesis was also partially supported by the finding that group interactions exhibit more extended instances of adjusted output than dyadic encounters, in particular in comparison with opinion-exchange task.

Taken as a whole, the hypothesis may be claimed to have been partially supported by the findings of the study.

It will not be possible to make a direct comparison between the findings of this hypothesis and other studies, since there is no comparable research investigating this particular area. Existing research has investigated the role of group and dyadic interaction only in providing opportunities for receiving comprehensible input (Long and Porter 1985, Pica and Doughty 1985, Doughty and Pica 1986) and found no real differences between the two types of encounters. The findings of the present hypothesis reveal that there are no significant differences between group and dyadic encounters with regard to the conversion rate between initiation and MCO production and with regard to extended negotiations although both are marginally favoured in group interactions. Additional confirmation of these findings awaits further future research findings.

Sections 6, 7 and 8 reported findings which relate to the effect of NS and NNS partners (hypothesis 4), the effect of picture-dictation and opinion-exchange tasks (hypothesis 5), and the effect of group interaction and dyadic interaction (hypothesis 6) on NNSs' production of MCO. The findings lend only partial support to hypothesis 4. Slight differences were found between NS/NNS and NNS/NNS interactions such that other-initiated clarification requests and other-initiated modified comprehensible output were significantly more frequent in encounters between NNSs and NNSs than between NSs and NNSs on the picture-dictation task. It was also found that NNS/NNS encounters resulted in a significantly higher proportion of extended negotiations than NS/NNS encounters.

With regard to hypothesis 5, the main findings reveal that the picture-dictation task provided significantly higher quantitative opportunities to initiate clarifications and for NNSs' production of MCO - including the frequency of extended negotiations - than the opinion-exchange task. As for hypothesis 6, the findings showed that NNSs' production of MCO in group interaction exhibited a very modest higher magnitude of relationship between initiation and MCO than dyadic encounters, in particular in

comparison with the picture-dictation task. It was also found that group interactions resulted in greater proportions of extended negotiations than dyadic interactions.

7.9 Summary of Findings

The overall conclusion of the findings of the study may be summarized in the following way:

Non-native speakers did modify their interlanguage performance producing thereby modified comprehensible output in response to self- and other-initiations, in both NS/NNS and NNS/NNS dyadic and group interaction on three communication tasks (picture-dictation, opinion-exchange and decision-making), although the roles played by these variables/factors were not the same. More specifically, in the light of the hypotheses tested in the present study and the results which have been presented, interpreted and discussed in this Chapter, the findings of the study - including the different roles played by the various variables examined - may be summarized as follows.[2]

1. NNSs modified their interlanguage (IL) phonology, morphosyntax and lexical choice in the direction of modified comprehensible output when they were asked by NS or NNS speech partners to make themselves understood with regard to an utterance or part of an utterance.

2. NNSs modified their IL phonology, morphosyntax and lexical choice in the direction of modified comprehensible output when they realized that their current or previous utterance or part of it was not comprehensible to their speech partners.

3. In NS/NNS and NNS/NNS interaction, just as in NS/NS interaction, self-initiated clarification attempts were not only favoured, but also resulted in a significantly higher proportion of modified comprehensible output than other-initiated clarification requests.

4. There were few differences between NS/NNS and NNS/NNS dyadic interactions on the picture-dictation and opinion-exchange tasks with regard to the NNSs' production of modified comprehensible output. Statistically significant differences were found between NS/NNS and NNS/NNS dyadic interactions such that other-initiated clarification requests and other-initiated modified comprehensible output were significantly more frequent in encounters between NNSs and NNSs than between NSs and NNSs on the picture-dictation task. It was also found that NNS/NNS encounters resulted in a significantly higher proportion of extended negotiations than NS/NNS encounters on these two tasks. There were no statistically significant differences between NS/NNS and NNS/NNS interactions with regard to (i) other-initiated clarification requests on the opinion-exchange task, (ii) self-initiated clarification attempts on the picture-dictation and opinion-exchange tasks, (iii) the production of MCO on all relevant variables in this connection except one (other-initiated modified comprehensible output on the picture-dictation task), (iv) one-signal MCO production on both tasks.

5. Further, with regard to the effect of tasks on dyadic interaction, it was found that the type of the task engaged in including its intrinsic difficulty affected the magnitude of conversion rate and the number/quantity of opportunities given to NNSs to produce adjusted comprehensible output. So, for instance, tasks which involved **required** (i.e., specific and particular) information for their successful completion, such as the picture-dictation task, offered more initiation triggers and gave NNSs quantitatively more opportunities to produce modified comprehensible output than tasks which required less specific information for their successful completion, such as the opinion-exchange task. Conversely, tasks which involved **optional** (i.e., less specific) information for their successful completion, such as opinion-exchange, led to a proportionately higher association or conversion rate between initiation and modified comprehensible output production than tasks which required specific and particular information, such as the picture-dictation task.

6. In many, but not all, respects, dyadic and group interactions produced similar talk opportunities. Dyadic interactions gave NNSs **quantitatively** more opportunities for the production of modified comprehensible output, whereas group interactions resulted in a marginally **higher conversion rate** between initiation and NNS MCO. This suggests that although opportunities to talk were less frequent in group discussion than in dyadic interactions, NNSs' production of modified comprehensible output in relation to the number of opportunities arising in the respective task was slightly higher in group discussion than in dyadic encounters. It was also found that group interactions involved proportionately more extended routines for the negotiation of meaning in the direction of modified comprehensible output than dyadic interactions, in particular in comparison with the dyadic opinion-exchange task.

The following Chapter will conclude this Thesis by summarizing the overall findings of the present study, and by placing and comparing them to those of other studies. Certain conclusions will be drawn, including considering what implications the findings of this study have for second language acquisition research and second/foreign language teaching and learning. Recommendations and directions for future research will be presented.

Note:

1. The global figures (0.850 and 0.722) superficially seem to be incorrect in that they turned out to be higher than the two component values (0.726 and 0.829, 0.527 and 0.687, respectively) taken separately. However, they were double-checked several times for their validity on two different statistical packages SPSS-X and Minitab under the supervision of the University Statistician Dr. J.G. Roberts. Dr. Roberts states that this is not unusual result because the results of the global figures may not necessarily depend on the values of the two components, but rather on the sample size.

2. The present study did not specifically investigate the effects of gender or ethnicity. Examining the effects of gender and ethnicity merit a study in their own right and therefore they were excluded from investigation. However, some effect of gender differences were observed in this study and these will be briefly reported here. (See Ch

5.3 for the distribution of informants with regard to gender over both dyadic and group interactions.)

Differences between males and females were examined in terms of initiation opportunities (other- and self-) and the production of modified comprehensible output. Dyadic and group interactions are considered separately. For the purpose of investigating this variable, the average number of initiations in dyadic and group encounters per male/female were compared. On the dyadic encounters, the result shows that males and females received comparatively similar averages of clarification requests from their speech partners regardless of gender (6.85 for males and 6.44 for females). However, the result also shows that females performed significantly more self-initiations than males (15.72 vs 11.42 respectively). As for group interactions, it was found that males took comparatively more opportunities to request clarification (an average of 1.50 for each male and 0.50 for each female) and to self-initiate clarification attempts than females (an average of 10.16 for each male and 7.80 for each female).

Similarly, the data were also examined with regard to the effect of gender on the production of modified comprehensible output. The findings showed that in dyadic interactions, male and female informants produced comparable cases of MCO in response to clarification requests by their speech partners regardless of gender (5.35 for males and 5.33 for females). The results also show that females produced more self-initiated MCO instances than males (13.94 vs 10.78 respectively). As for group interactions, it was found that males also took comparatively more opportunities to produce both OIMCO (an average of 1.16 for each male and 0.50 for each female) and SIMCO than females (an average of 9.66 for each male and 7.20 for each female).

Taken together, the emerging picture shows that **dyadic encounters provided better contexts for females to self-initiate and produce modified comprehensible output than males, whereas group interactions provided better contexts for males to self-initiate and produce modified comprehensible output than females.** Because the distribution of informants did not mix gender in pair encounters, it is not entirely clear whether these male-female differences were due to the type of interaction (pair vs group) or the speech-partner(s) (same sex rather than opposite sex), or some other variable.

Gass and Varonis (1986) found that men appeared to dominate in conversations with women in ways which provided them with opportunities to produce comprehensible output and women initiated more meaning negotiations than men in mixed-sex dyads. This implies that each sex-type used the conversation in a different way:

> "Men took greater advantage of the opportunities to use the conversation in a way that allowed them to produce a greater amount of comprehensible output, whereas women utilized the conversation to obtain a greater amount of comprehensible input" (1986: 549-350).

The current observations support these results in that it was found that men appeared to take greater advantage in the group activity (a mixed-sex task) to use the conversation in a way that allowed them to produce a greater amount of comprehensible output. But the present research also revealed that same-sex dyads offered women comparatively greater opportunities to produce MCO than men.

Chapter Eight

Conclusion, Implications and Recommendations for Further Research

The previous Chapter dealt comprehensively with the analysis of the data collected, the results of hypothesis testing and the findings of the study. This Chapter completes the present study by presenting the conclusions it reached and showing what implications its findings may have for SLA research and second/foreign language pedagogy. The Chapter is divided into four main sections. The first section provides a ***resumé*** of previous Chapters, including the purpose of the study, its motivation, its methodology and its model. In the second section, a discussion of the findings of the study in relation to existing theoretical positions and research findings on comprehensible input and comprehensible output will be presented. In section three, the implications of the findings for SLA research and second/foreign language learning and teaching will be presented. In the fourth section, the limitations of the study as well as recommendations for further research in SLA will round off this Chapter and the thesis as a whole.

8.1 Summary of Previous Chapters

Chapter 1 described the motivation, the purpose and the scope of investigation for this study. It was indicated that the aim of the study was to investigate NNSs' production of MCO. It was pointed out that empirical research in this area is scarce (see Pica 1988 and Pica et al. 1989), although several SLA researchers have argued that studying L2 learners' production ability is as important as studying their comprehension ability (e.g., Swain 1985, McLaughlin 1987).

Chapter 2 reviewed the literature on input and interaction in both first language acquisition and second language acquisition contexts. Specifically, the Chapter reviewed the various existing theoretical positions and research findings with regard to the nature of input and interaction in different contexts and their effects on SLA.

Chapter 3 reviewed the literature which relates to the relationship between the input data which NNSs receive and the output data which they produce, repair mechanisms and the various communication strategies which NNSs follow when they communicate in the second language and when there is communication breakdown.

Chapter 4 reviewed the theoretical positions and the limited number of empirical studies which focused on (a) NNS/NNS interaction in relation to NS/NNS interaction and (b) NNSs' production ability, focusing in particular on their production of comprehensible output.

Chapter 5 described the methodology employed for data collection in detail, including the choice of informants, choice of communication tasks, data collection procedures, and criteria for transcribing the data collected.

Chapter 6 presented the proposed model within the framework of which data were coded and analyzed. It provided a comprehensive presentation of the model, including its main categories and sub-categories, together with descriptions and examples of each category and sub-category. For ease of exposition, a chart was also attached to the end of the Chapter showing how the main categories and sub-categories relate to each other and to the model as a whole.

Chapter 7 presented data analysis and results of hypothesis testing, including a complete description and justification of the means by which the hypotheses were analyzed. The results of hypothesis testing and the findings of the study were presented, interpreted and discussed comprehensively. The Chapter also summarized the findings

of the study. The main conclusions and findings of the study will be discussed in the following section.

8.2 Discussion and Conclusions

This section will discuss the main findings of the study, consider them in relation to other theoretical positions and empirical findings relevant to the current study and attempt to draw certain conclusions.

Generally speaking, the theoretical positions implied by the hypotheses as well as the particular hypotheses themselves were confirmed by the findings. First of all, the majority of the six hypotheses were statistically confirmed by the results of the study. The overall findings showed that on three communication tasks, NNSs' did modify their output linguistically to make it more comprehensible either (i) when their speech partners signalled an explicit need for clarification or (ii) when they realized that their current or previous utterance or part of it was not completely comprehensible to their speech partners. This modification occurred when NNSs interacted with NSs or with fellow NNSs in both dyadic and group encounters.

It can be argued, therefore, that the findings provide further support for Swain's (1985) comprehensible output arguments as well as the other positions which suggest that more attention should be paid to L2 learners' production ability and its role in SLA (Schachter 1984, Hatch et al. 1986, Sato 1986, Brock et al. 1986, Wong-Fillmore 1985, McLaughlin 1987, Gass and Varonis 1986). The findings also lend further support to the limited number of empirical studies which have to date looked at NNSs' modification of their IL utterances in the direction of comprehensible output (Pica 1988, and Pica et al. 1989).

As in previous empirical studies, the results of the current study show that NNSs tend to modify their output when their NS speech partner(s) signal an explicit need for

clarification. However, this study also shows that NNSs tend to modify their output whether their speech partners are NSs or NNSs. The study further shows that this is true not only in dyadic encounters but also in group interaction. The researcher found some differences with regard to the proportions of MCO production between his study and the various other studies. It was argued that these differences relate to choice of type of informant (NSs and NNSs), set-up design and data collection procedures (see Ch 7.3). In essence, nevertheless, the findings of all empirical studies have shown that NNSs tend to modify their IL production in the direction of comprehensible output when their speech partners signal an explicit need for clarification, despite the fact that the proportions of these modifications vary to some degree among the various studies.

The results of the present study provide empirical evidence in support of theoretical arguments from ethnomethodological observations of NS/NS interaction (Schegloff et al. 1977, Schegloff 1979), by research findings relating to NS/NNS interaction (Gaskill 1980, Day et al. 1984, Chun et al. 1982 and Brock et al. 1986) and by research findings in NNS/NNS interaction (Schwartz 1980, Fathman 1980, Kasper 1985). These arguments amount to the claim that opportunities for self-initiated repair not only occur more frequently than for other-initiated repair, but also that self-initiated repair results in higher proportions of adjusted comprehensible output. These researchers have argued, therefore, that the organization of speech not only favours self-initiation (of repair) but that it also gives more opportunities for it and that it is more likely to result in MCO.

It was found that (i) self-initiated clarification attempts by NNSs considerably resulted in their production of modified comprehensible output, (ii) the occurrence of self-initiation of clarification was significantly more frequent than the occurrence of other-initiation of clarification and (iii) the proportions of self-initiated MCO were significantly higher than of other-initiated MCO. As such, the results have shown that NS/NNS and NNS/NNS dyadic and group interactions, just like NS/NS interactions, not only favour self-initiations over other-initiations but also result in significantly higher proportions of self-initiated MCO production.

Similarly, Gass and Varonis (1985a,b, 1986) and Varonis and Gass (1985a,b) have consistently argued that NNS/NNS interactions provide better contexts for the negotiation of meaning than either NS/NS or NS/NNS interaction. This is in part because NNSs do not lose face by negotiating meaning with other NNSs in the same way as they might with NSs (Varonis and Gass 1985b: 84-85). Varonis and Gass maintain this is also because NNS/NNS interactions provide a non-threatening forum within which to practise developing language skills, including an opportunity to receive input which they have made comprehensible through negotiation (Varonis and Gass 1985b: 87). Thus NNS/NNS negotiation serves the function of providing NNS participants with a greater amount of **comprehensible input.**

In the light of these arguments, the present study predicted that NNS/NNS dyadic interactions on the picture-dictation and opinion-exchange tasks would also provide better contexts for modifications towards **comprehensible output** than NS/NNS dyadic interactions on the same two tasks. The results of hypothesis testing lent only limited support to this prediction. There were few differences between NS/NNS and NNS/NNS interactions with regard to the production of modified comprehensible output. Namely, NNS/NNS interactions did provide significantly higher opportunities for other-initiations and other-initiated modified comprehensible output on the picture-dictation task. They also provided significantly higher proportions of extended negotiations than NS/NNS interactions. On the other hand, there were no significant differences between the two types of encounters with regard to (i) self-initiations on either task, (ii) self-initiated modified comprehensible output on either task, and (iii) other-initiations and other-initiated modified comprehensible output on the opinion-exchange task. Nor were significant differences found with regard to the one-signal production of modified comprehensible output.

The importance of type of task for SLA has been investigated primarily in relation to the resulting opportunities for negotiation of meaning and the provision of comprehensible input (e.g., Long 1980, 1981, Brock et al. 1986, Pica 1986, Duff 1986, Gass and Varonis 1986). It was only in 1989 that Pica et al. (1989) investigated the

importance of task-type with regard to the provision of **comprehensible output**. They found that a picture-dictation task provided NNSs with significantly greater opportunities to receive clarification requests and marginally greater opportunities to produce comprehensible output than a jigsaw task or a discussion (i.e., opinion-exchange) task (Pica et al. 1989: 74).

The findings of the present study provide further support for Pica et al.'s findings in this respect. It was found that in dyadic interaction, the picture-dictation task provided speech partners with significantly greater opportunities to initiate clarifications and for NNSs to modify their production in the direction of comprehensible output than the opinion-exchange task. The findings also revealed that the significant differences between the proportions of opportunities each task provided NNSs with to produce comprehensible output were due to other-initiated modified comprehensible output and not self-initiated modified comprehensible output. This means that opportunities to produce the latter were not affected by type of task, since both tasks provided equally high proportions of self-initiations and self-initiated modified comprehensible output. Task-type affected the proportions of other-initiated modified comprehensible output opportunities with the picture-dictation task providing NNSs with significantly higher proportions of other-initiated modified comprehensible output opportunities than the opinion-exchange task.

Furthermore, it was found that type of task did affect the production of modified comprehensible output in terms of the number of cycles (one-signal vs extended). The picture-dictation task exhibited significantly higher proportions of extended negotiation (26% of the total number of cases of modified comprehensible output production) than the opinion-exchange task (20%). This means that when successful completion of the task depends primarily on the NNSs' production of accurate and precise comprehensible output (as in the picture-dictation task), higher proportions of extended negotiation routines are more likely to occur.

It is evident, therefore, that the type of the task not only affects negotiated interactions so as to provide different opportunities for the provision of comprehensible input, but also that it affects negotiated interactions so as to provide varying opportunities for the production of comprehensible output. These conclusions were equally valid for NS/NNS and for NNS/NNS dyadic interactions as shown by the present study.

As for group interaction versus dyadic interaction, it must be emphasized that there is no empirical study to date which has examined NNSs' opportunities for the production of comprehensible output in group interactions. Almost all theoretical positions and empirical studies which have investigated group interactions have done so in relation to their role in facilitating SLA by providing comprehensible input (e.g., Long 1975, Long and Porter 1985, Krashen 1981a, 1982a, 1985, Krashen and Terrell 1983).

The current investigation found that although group interaction on the decision-making task provided quantitatively fewer opportunities for the production of modified comprehensible output in comparison to dyadic interactions on the picture-dictation and opinion-exchange tasks, it did provide marginally higher level of *association* or conversion rate between initiation and the production of comprehensible output. This finding may be taken to suggest that group decision-making task provides preferred quality talk in the sense that there is a higher level of conversion rate or association between the opportunity of initiation and successful completion. In other words, the implication is that higher conversion rate may reflect a quality output and therefore a quality talk-type.

Since one-to-many interactions exercise more pressure on the speaker to be as accurate and comprehensible as possible, as the addressees have different personal, linguistic and cultural backgrounds, extended negotiated routines might be expected to take place. Indeed, it was found that group interactions did provide NNSs with higher proportions of extended moves towards comprehensibility than dyadic encounters. However, it was also argued that the type of group decision-making task (+ convergent) might have also

contributed in part to the frequent occurrences of extended negotiated routines on this task, in particular in comparison with the dyadic opinion-exchange (- convergent) task.

Unlike Pica's (1988) study, no attempt was made in this study to judge the 'nativelikeness' of NNSs' MCO utterances. There were two reasons for this: (i) The difficulties involved in identifying and specifying accurately what 'nativelike' utterances are[1], and (ii) there are many NNS repairs and clarifications which are indistinguishable from those occurring in NS/NS interactions, such as false starts, new starts, pauses, overgeneralizations, explanation and exemplification. There are of course other NNS repairs and clarifications which are very different, such as L1/L3 based repair and literal translation from the MT (See Ch 3.3 for a detailed review of NNSs' repair and communication strategies).

Also, unlike the studies of Pica (1988) and Pica et al. (1989), no attempt was made in this study to isolate the specific linguistic level at which successful repair was performed. The reason is that there is no clear way of knowing whether clarification or repair occurred at the same linguistic level as the trouble-source or constituted an avoidance-type clarification (i.e., occurred at a different linguistic level from the trouble-source). It is, therefore, difficult to categorize the specific type of modified utterance. So, for example, modification as a result of other-initiated clarification requests or self-initiated clarification attempts may result in change of plan, reordering and restructuring, and hence clarifications come about not by modification of the original utterance but rather by reordering or restructuring the direction of the conversation. By the same token, there are also cases in which clarifications take place at, for example, the lexical level which are the result of phonological problems, as in the following example where 'pikitures' is replaced by 'photo':

NNS: ...have two pikitures also they are
NS: ahah
NNS: two pikitures
(0.9) is a photo with someone's face in enn take a photo of some people (laughs) (1.0) yeah.
(PD 1: 92-97)

There are such instances when it is very difficult to identify the exact level of the trouble-source or the initiation. Each instance (or case) may depend on the particular interpretation of each of the speech partners which makes it difficult operationally to analyze trouble-sources and initiations according to their particular linguistic or discourse level. An introspection study including learners' self-reports may help to find out a description of the strategies involved in the processes which learners follow in adjusting their output utterances.

Notwithstanding the previous arguments, investigation of NNSs' clarifications with regard to their 'remoteness' or 'closeness' to the TL native norms, and investigating same-type vs avoidance-type clarification merit a study in their own right. Such an investigation might also examine, for example, the effect of the clarification type (other-initiated or self-initiated), task-type and speech partner on bringing about more nativelike or less nativelike TL utterances and/or bringing about same-type clarification or avoidance-type clarification. It would also be interesting to find out whether and to what extent same-type and avoidance-type clarifications result in either more or less nativelike use of the TL norms.

8.3 Implications of the Findings

8.3.1 Theoretical implications

Perhaps the most important implication of the findings of this study is that NNSs' production of the target language might prove to be an important factor in promoting second language learning. It was shown that, irrespective of the input, NNSs were able to modify their IL phonological, morphosyntactic and lexical utterances in the direction of **comprehensible output** in response to self-initiated clarification attempts and to other-initiated clarification requests. This may imply that successful SLA depends not only on ways of comprehending input, but also on the L2 learners' ability to modify their IL utterances and use the skills and strategies which will enable them to produce

comprehensible output. If these assumptions are valid, then the findings of the study provide further support to the previous theoretical claims and empirical studies into the significance of L2 learners' production in SLA.

Until recently most previous theoretical positions and empirical findings have maintained, in one way or another, that SLA is the result of exposure to comprehensible input (e.g., Corder 1978, Krashen 1981a,b,c 1982a, 1985, Krashen and Terrell 1983, Long 1980, 1983d, Long and Sato 1983, Hatch 1983b, Gass and Varonis 1985b). Some of these researchers have looked at L2 learners' comprehension ability and performance ability and concluded that learning and communication strategies, exchange of information strategies, interaction, input, simplified input, output and feedback facilitate SLA by providing comprehensible input. As reported earlier (Chs 1 & 2), Krashen (1981c: 57), for example, argues that comprehensible input is the only "causative factor" for SLA. Krashen and others (e.g., Seliger 1977, Monshi-Tousi et al. 1980, Snow and Hoefnagel-Hohle 1982, Gaies 1983, Gass and Varonis 1982, 1984) have argued that the role of output is only to provide opportunities for generating more comprehensible input, for instance, via feedback. According to Krashen, speaking *itself is not necessary* for acquiring a second language:

> "It is, in fact, theoretically possible to acquire language without even talking" (Krashen 1982a: 60).

Several SLA researchers have pointed out that input studies have favoured the role of comprehension (input) while deemphasizing at the same time the importance of production or learners' output (e.g., Swain 1985, McLaughlin 1987). Swain in particular argued that understanding new forms is not enough and that learners must also be given the opportunity to produce them. She doubts that interactions and comprehensible input on their own are sufficient for SLA. She claims:

> "Conversational exchanges...are not themselves the source of acquisition derived from comprehensible input. Rather they are the source of acquisition derived from comprehensible output: output that extends the

> linguistic repertoire of the learner as he or she attempts to create precisely and appropriately the meaning desired" (Swain 1985: 252).

Swain acknowledges the role of comprehensible input in SLA, but argues that comprehensible output is also a necessary mechanism which aids SLA in many ways:

> "Its role is, at minimum, to provide opportunities for contextualized, meaningful use, to test out hypotheses about the target language, and to move the learner from a purely semantic analysis of the language to a syntactic analysis of it" (Swain 1985: 252).

Moreover, it has recently been demonstrated that when NNSs are asked by NSs to clarify their output, they do so by modifying their IL utterances so as to achieve native-like production in the process of producing comprehensible output which serves as comprehensible input to NSs (Schachter 1984, 1986, Hatch et al. 1986, Brock et al. 1986, Sato 1986, Pica 1988 and Pica et al. 1989). In other words, when a NS indicates a difficulty in understanding a NNS, the latter responds by modifying IL phonology, morphosyntax and lexical choice and, in doing so, achieves/supplies more target-like utterances.

The findings of this study lend support to these claims of Swain (1985), Hatch et al. (1986), Sato (1986) and Brock et al. (1986), and confirm the empirical findings of Pica (1988) and Pica et al. (1989). The findings show that NNSs are able to modify their interlanguage performance in the direction of comprehensible output in response to other-initiated clarification requests. These output modifications occurred in both NS/NNS and NNS/NNS dyadic interactions and in interactions involving groups of NNSs. More importantly, NNSs were also able to modify their interlanguage production in the direction of comprehensible output in response to the markedly more frequent occurrences of self-initiated clarification attempts under all variables and conditions examined in this study.

In the light of these arguments, the results of the study may be taken to support the underlying assumption that the role of L2 learners' production is not only to give feedback in order to generate more comprehensible input, but also to facilitate SLA and

development by offering NNSs opportunities to modify their IL utterances in the direction of comprehensible output. If this assumption is valid, it would be possible to argue, then, that comprehensible output - like comprehensible input - is indeed a mechanism that plays a role in promoting SLA. For instance, Pica (1988) and Pica et al. (1989) maintain that NNSs' ability to accomplish self-adjusted comprehensible output (i.e., NNS-based MCO) rather than other-adjusted comprehensible output (i.e., interlocutor-based MCO) is evidence which supports Swain's (1985) claim that the comprehensible output moves the learner from semantic analysis of the TL to a syntactic analysis of it. The findings of this study revealed that in 81% of other-initiated clarification requests, NNSs produced NNS-based MCO, and in 91% of self-initiated clarification attempts, they produced NNS-based MCO (see Ch 7.3 & 4). It is possible to argue, therefore, that the findings of this study further support the arguments of Swain and Pica et al.

Looking at the various theoretical positions and empirical findings relating to comprehensible output together, it seems that L2 learners' production serves 3 functions. (1) It indirectly generates more comprehensible input, as claimed by Krashen (1981a, 1982a, 1985,) Long (1981, 1983d), and many others. (2) It facilitates second language development by providing L2 learners with opportunities to produce comprehensible output which is achieved by modifying and approximating their production towards successful use of the target language, as claimed by the present researcher and others (e.g., Swain 1985, Hatch et al. 1986, Pica 1988 and Pica et al. 1989). (3) It may provide us with a better understanding of the processes of SLA. Hatch (personal communication) reports that there are SLA researchers working in the artificial intelligence modelling such as Gazden, who suggest that it is only through careful modelling of production that we will understand the possible types of mental processes involved in the use and production of the TL[2].

Similarly, the significance of **negotiated interactions** and the negotiation of meaning for SLA have until recently been taken to be the basis for the provision of comprehensible input only (e.g., Krashen 1985, Long 1980, 1981, 1983a,b,d, Varonis

and Gass 1985a,b and Gass and Varonis 1984, 1985a,b, Doughty and Pica 1986, Pica, 1987, Pica et al. 1986, Pica et al. 1987). It is only latterly that SLA researchers have drawn attention to the importance of these categories not only for the provision of comprehensible input but also for the production of comprehensible output (Swain 1985, Gass and Varonis 1986, Pica 1988, Pica et al. 1989). Pica et al., for instance, point out:

> "Although...research has focused mainly on the ways in which negotiated interaction with an interlocutor helps the learner to *understand* unfamiliar L2 input, we believe that it is also through negotiation that learners gain opportunities to attempt *production* of new L2 words and grammatical structures as well" (1989: 65).

Pica et al. further maintain that through the negotiation of meaning both learners and their interlocutors work together to produce comprehensible input and comprehensible output (Pica et al. 1989: 84).

In support of these arguments, the present findings show that interactions in which the negotiation of meaning is prevalent are important for the production of comprehensible output. It is possible to suggest therefore that negotiated interactions are important not only because they provide NNSs with an opportunity to receive input which they have made comprehensible through negotiation (Varonis and Gass 1985b: 87), but also because they provide them with opportunities for (extended) negotiated interaction so as to produce comprehensible output, as this study has revealed.

In the light of the findings of this study as well as the different arguments which relate to NNSs' comprehension and production and their relevance for SLA discussed above, it is possible to conclude that opportunities for comprehensible input and opportunities for comprehensible output which arise through the negotiation of meaning are both important to SLA. Based on these arguments, the following proposed model (Figure 8.1) shows how the negotiation of meaning, comprehensible input and comprehensible output relate to second language acquisition:

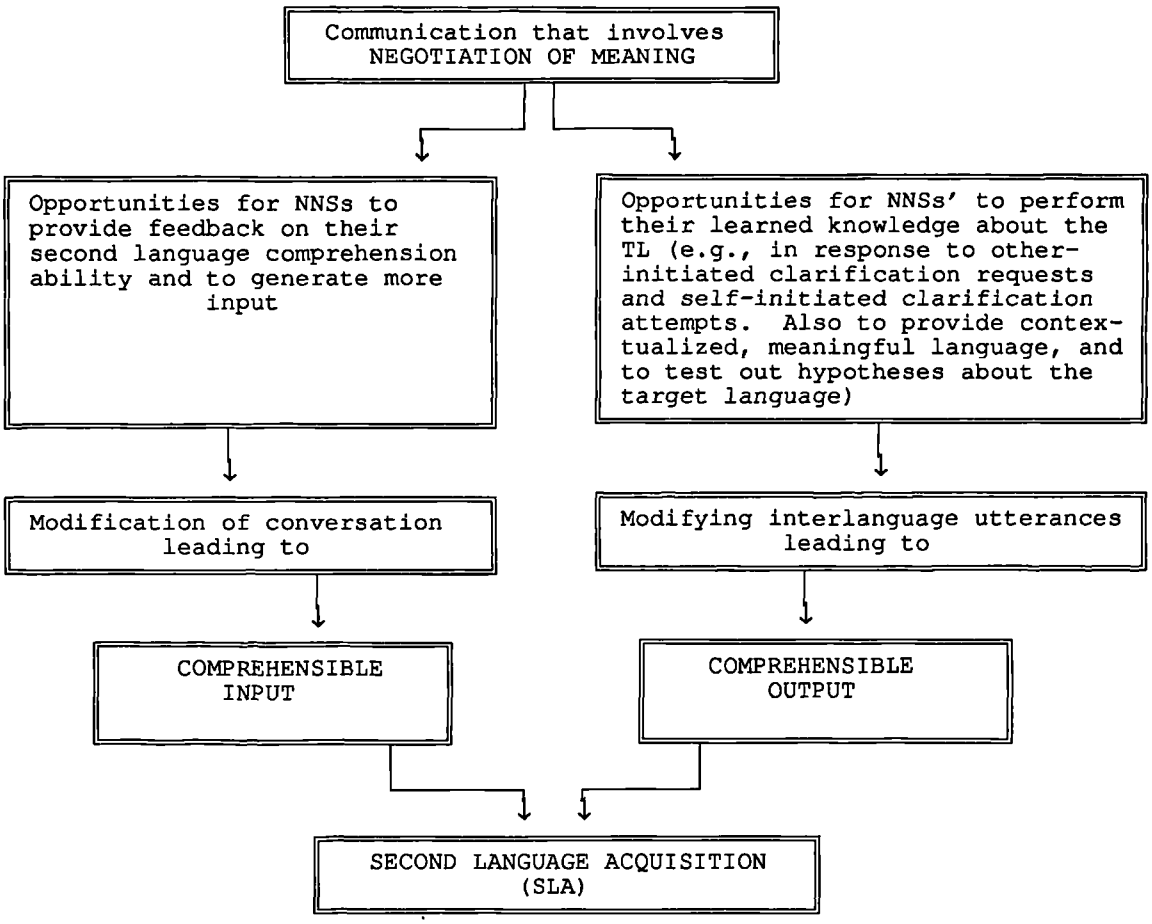


Figure 8.1: A proposed model for second language acquisition which involves both comprehension and production

Unlike Krashen's (1981c) model or Long's (1983d) model (both of which are presented in Ch 2.2.2.1 (c)), this model suggests that SLA is aided by providing opportunities for *both* comprehensible input and comprehensible output.

8.3.2 Pedagogical implications

According to Schegloff et al. (1977), there is a cline in conversations: in normal conversation, the norm is self-initiated self-completed repair, so that in non-normal conversation, the proportion of other-initiations or other-completions is higher than would be expected, and in situations in which there is a constant failure to repair, interlocutors will eventually cease to converse. This implies that one way of measuring

successful SLA is by looking at the ability to carry on conversation in which self-initiated self-completed repair is the dominant norm.

Furthermore, it has also been observed that in NS/NS discourse (Schegloff et al. 1977) and NS/advanced NNS discourse (Kasper 1985), the vast majority of repair is content/pragmatic repair rather than linguistic. This also implies that successful SLA can be measured by the ratio of content/pragmatic to linguistic repair. The higher the proportion of content/pragmatic repair and the lower the proportion of linguistic repair, the greater the likelihood of successful SLA; and conversely, the higher the proportion of the linguistic repair and the lower the proportion of content/pragmatic repair, the greater the likelihood that SLA is at an early stage.

The last two arguments amount to the thesis that successful SLA may be measured by the proportion of self-initiations and self-completed MCO in relation to other-initiations and other-completed MCO respectively, and the proportion of content/pragmatic repair in relation to linguistic repair. It follows that the more self-initiated self-completed *content/pragmatic* repair, the more native-like the production/interaction is; whereas the more other-initiated other-completed *linguistic* repair, the less nativelike the production/interaction is. Hence, the optimal SLA environment is one in which **self-initiated self-completed content/pragmatic repair or clarification** is predominant.

In the light of these arguments, the present study has confirmed the predominance of self-initiation and self-completed repair over other-initiation and other-completed repair. It was found that self-initiated clarification attempts occurred in significantly greater proportions than other-initiated clarification requests. Also self-initiated MCO occurred in significantly greater proportions than other-initiated MCO. The implication is, then, that the ability to continue a conversation which requires the kind of performance associated with successful SLA (i.e., the predominance of self-initiated self-completed repair) was confirmed by the findings of this study. Another conclusion one can draw with confidence from the findings and the arguments presented above is that if repair leading to MCO is integral to successful SLA, it is not only clarification requests

(other-initiations) which matter, but more importantly the extent to which self-repair is a normal strategy.

The pedagogical implication of these arguments is that self-initiated clarification attempts and self-initiated MCO must be considered preferred classroom strategies. The main point here is that at more advanced levels of second language proficiency (e.g., intermediate and advanced), self-initiated clarification attempts and self-initiated MCO must be encouraged as preferred classroom strategies for language learning. The rationales are (1) these strategies are preferred strategies in NS/NS interaction as shown by Schegloff et al. (1977) and others. And as the main purpose of learning a second/foreign language is to approximate NS/NS interaction, engineering situations which encourage the production of self-initiated modified comprehensible output is well motivated teaching strategy. (2) In conversations these give the learner significantly more opportunities to use the TL and are significantly more frequent than other-initiated clarification requests and other-initiated MCO as shown by the present study as well as previous studies (e.g., Gaskill 1980, Kasper 1985).

However, as mentioned in section (8.2), owing to the difficulty of identifying with confidence the specific types of trouble-sources and initiations in relation to repairs, this study did not examine content/pragmatic repair and linguistic repair separately. It is not possible, therefore, to know the proportion of content/pragmatic repair in relation to linguistic repair in the present study. Such investigation falls outside the scope of this study, partly because ideally it requires other methods of data collection including introspection analyses and self-report, although to a certain extent, the data collected for this study could probably be reanalyzed for such a study.

If the arguments which relate to the importance of the negotiation of meaning mentioned earlier are valid, then it is possible to argue that activities which involve NS/NNS and NNS/NNS dyadic and group interaction also have pedagogical implications for language learning. Most significant of these, since most foreign/second language teaching normally takes place far away from the TL community, is the finding

that NNS/NNS dyadic and group interactions play an important role in promoting or affecting SLA by providing not only comprehensible input but also opportunities to produce comprehensible output. Related to this implication is the finding which relates to group encounters. This finding also shows the value of group interaction in language classroom situations for the negotiation of meaning, which is in turn an important factor in the production of modified comprehensible output as well as comprehensible input. NNS/NNS interactions constitute an appropriate context which provides NNSs not only with an opportunity to receive comprehensible input which they have made comprehensible through negotiation (Varonis and Gass 1985b: 87), but also lead to the production of comprehensible output, an output which they have also made comprehensible to other NNSs through negotiation as revealed by the present study.

It must be cautioned that in the homolingual classroom, there is the danger that students might resort to their shared MT to complete the task or the activity required. However, assuming the motivation and the desire to learn the TL, it is possible to argue (based on intuitions and experience in teaching and learning foreign languages) that learners' use of the MT to perform the activities/tasks required is a more remote possibility than might be expected. For instance, it was clear from this study that the two NNS informants (24 & 32) who shared one MT (Arabic) produced MCO in English (the TL) rather than resorting to their shared L1 background to complete the tasks.

It can also be argued that the implication of negotiated interaction studies, including the present study matches methods such as communicative language teaching which emphasize learner/learner (or NNS/NNS) interaction. The communicative language teaching approach emphasizes interactions which involve problem-solving, decision-making and opinion-exchange, with picture-dictation and jigsaw tasks as standard communicative exercises for developing fluency in the TL (e.g., Brumfit 1980, 1984, Brumfit and Johnson 1979, Johnson 1982, Widdowson 1990). Since the current research has investigated NNSs' ability to produce MCO under different conditions, it could be regarded to some extent as measuring the communicative competence of learners. Moreover, since teachers who work within the communicative approach might want to

find ways of justifying the kinds of tasks followed in the communicative classroom, which are typical of the kind of tasks mentioned above, this thesis lends support to the significance of these tasks in getting NNSs to produced MCO or TL-like performance.

The two closely related points being made here are (1) in confirming the importance of negotiated interactions and the negotiation of meaning for the production of MCO, the study also lends support to one of the basic principles of the communicative language teaching, namely, the importance of interaction and the negotiation of meaning for developing TL proficiency. And (2) the three tasks this study looked at are typical of classroom tasks used by teachers who say that they are following the communicative approach. In many ways, the problem facing such teachers is justifying the significance of these tasks for language learning. This study has been able to show that these tasks promote MCO, which is assumed to be successful (and by implication, native-like) language behaviour. And therefore, in successfully accomplishing these tasks, the informants have demonstrated the type of communicative competence which is assumed to develop fluency in the TL.

It is beyond the scope of this study to discuss all the pedagogical implications in detail. However, it is my belief that the findings of the study may provide useful insights for classroom practice. In particular, pedagogical research in this area may look at ways of setting up interactions in which self-initiated modified comprehensible output predominates over other-initiated modified comprehensible output, and at how teachers should respond to comprehensible but erroneous output, the types of tasks that might be used, their distinguishing cognitive characteristics, how they might be graded to match the proficiency level of learners, as well as at creating situations which encourage learner-based adjustments rather than interlocutor or teacher-based adjustments and encouraging content/pragmatic rather than linguistic repair.

8.4 Limitations of the Study and Recommendations for Further Research

As mentioned in Chapter 1.3 and Chapter 6.3, MCO may be studied from various perspectives, such as its aspects and features (nativelikeness, systematicity and variability), the strategies which NNSs follow in the process of its achievement (e.g., restructuring, paraphrasing, new starts, etc.), the contexts which encourage its production and its precise role in promoting or affecting SLA. It has been beyond the limits of this study to look at the features of modified comprehensible output, the strategies followed in its realization or at describing its specific role in SLA (although it was argued in the preceding section that successful MCO production may be considered to facilitate SLA). It was also argued in the preceding section that successful production of modified comprehensible output is considered to be an indicator of successful second language acquisition. However, this should not mean that there is a causal relationship between output and SLA. Rather elicitation and analysis of L2 learners' output - as in the case of this study - only enable us to make assumptions about possible association between NNSs' ability to successfully produce modified comprehensible output and successful second language acquisition.

The study focused on NNSs' production of modified comprehensible output (elicitation and analysis) and compared two suggested mechanisms for its production (other-initiated modified comprehensible output vs self-initiated modified comprehensible output) in terms of the number of opportunities each mechanism provided in particular situations. It would be particularly interesting to find out, for instance, if there are differences between the strategies which NNSs follow to make themselves understood in response to other-initiated clarification requests and those which they follow in response to self-initiated clarification attempts. It would also be interesting to examine if there are any differences between the features of modified comprehensible output which result from other-initiations and those which result from self-initiations. So, for example, it would be interesting to investigate which linguistic forms and features made clearer items or utterances which were not clear before. Are problems of comprehension and intelligibility more related to the segmental or suprasegmental levels of the

language? How do they relate to the modified utterance? Do they need to be taken alongside the initial utterance? A study especially designed to look at these aspects and/or the strategies of each mechanism is clearly well motivated. For this reason, the data collected for this study could be re-examined and re-analyzed for this purpose in a future study.

There are also cases in which clarification was not successfully performed from the hearer's viewpoint, but was considered to be successful by the speaker of the trouble-source. So, for example, in the following encounter it is not clear whether the NNS recognizes the trouble-source item ('shair') in the first place, nor whether he recognizes that he failed to repair or modify the specific part of the utterance in which the trouble-source was originated (namely, 'shair'), nor whether he assumes that *in the left side of the bed because the other right is in the corner of the room* constitutes the clarification needed or the modification required:

NNS: well enn (1.0) near to the near to the bed to the top of the bed (0.7) you have a shair
NS: a what
NNS: shair (0.8) in the left side of the bed because the other right is in the corner of the room
NS: yeah
(PD 7: 670-676)

This is an important aspect of negotiated interactions and negotiation of meaning studies. However, it is difficult to draw firm conclusions or to predict what the speech partners were actually thinking at the moment of a particular response or in a reaction to that response. An introspection study especially designed for this purpose might provide satisfactory answers to these speculations and queries, although there are the very obvious difficulties in getting informants to describe the processes by which they reach a decision as to whether repair is being achieved.

It should perhaps also be borne in mind that this kind of work might reflect an ethnocentric perspective on successful SLA, in the sense that there may be cultures in which a clarification request sounds rude, is never made or would be inappropriate in

most encounter-types. (The same argument could be raised against Krashen's notion of comprehensible input and input studies in general, see Faltis 1984: 355, who observed that there are certain communities in which children acquire their L1 without actually having access to simplified comprehensible input. (See Chapter 2.1.4)). This could mean that the idea that successful SLA depends partly upon the ability to respond to clarification requests would be typical of a culture where people appear to be relatively equal on first encounter. Because such equality is assumed, clarification requests are considered as part and parcel of SLA in this type of culture (e.g., the contemporary Anglo-American). But in cultures where clarification requests are rare, the notion that successful SLA depends to some extent upon other-initiated clarification requests would not obtain.

Similarly, in some cultures, the initiation of repair may be triggered more by lexical means than by non-lexical or extralinguistic means, whereas in other cultures triggered more by, for instance, non-lexical means than by lexical means. For instance, in Japanese, turn-allocation is determined by particles or clitics, whereas in English this is not the case. This implies that the findings of this study (and any other similar study) may be influenced not only by variables such as proficiency level, gender, age, the nature of the TL, the interlocutor(s), the task, the context, attitudes and motivation and the personality of the speaker (extrovert/introvert, risk-taker/risk avoider, serialist/holist), but also by ethnolinguistic conventions and the cultural and educational backgrounds of the learner. In the light of these personal and cultural variables, there are likely to be some learners who do not make self-initiated clarifications, or clarify in response to other-requests. If there are such learners and if the assumptions about the significance of comprehensible output in SLA are also valid, it would be interesting to design a further study to test the extent to which these learners' SLA is affected.

Finally there are various factors, external and internal, which are generally claimed to influence SLA. These factors include the role of the first language, setting differences and the role of instruction, age differences, individual learner differences, gender differences and ethnic/cultural differences. It has generally been assumed that the

importance of examining these factors is that they are likely to shed light on the nature of input that best suits L2 learners' **comprehension ability**, thereby promoting SLA (Larsen-Freeman (1985a: 434). Knowing the extent to which these factors affect SLA in general and second/foreign language learning/teaching in particular may provide, pedagogically speaking, insights which help second/foreign language teachers to make language learning more effective. Therefore, it is also useful for SLA and language teaching research to examine the extent to which these factors affect NNSs' output (or production).

Ideally, it would be very useful, therefore, if the effect of other variables such as gender and ethnicity were examined. The effect of ethnicity was not investigated in this study partly because of the constraints on sufficient representative samples with regard to cultural and mother tongue backgrounds and partly because it falls outside the scope of the present research. Similarly, although the effect of gender was not examined in detail in part because it was not one of the main goals of the study, one additional observation with regard to its effect on the NNSs' production of adjusted comprehensible output was reported (see pp. 242-243). Indeed, the effect of gender on conversational interactions has been an important variable in NS/NS interactions (see, for example, West 1979, West and Zimmerman 1983, Zimmerman and West 1975) and is now becoming an increasingly important issue for SLA research, as demonstrated by Gass and Varonis (1986), Pica et al. (1989) and as observed in the present study.

Gass and Varonis, for instance, found that males and females have utilized the negotiation of meaning differently, in particular that men took greater advantage of the opportunities to use conversation in a way that allowed them to produce a greater amount of comprehensible output, whereas women utilized the conversation to obtain a greater amount of comprehensible input (Gass and Varonis 1986: 349-350). The observation made in this study also found that men appeared to take greater advantage of mixed-sex group activity to use the conversation in a way that allowed them to produce a greater amount of comprehensible output. The present research also revealed

that same-sex dyads offered women comparatively greater opportunities to produce MCO than men.

Research investigating the role of sex differences in the negotiation of meaning, the provision of comprehensible input and the production of comprehensible output is still in its initial stages and is comparatively rare. More empirical research is needed into this seemingly important variable. Such research might also examine whether the seemingly different roles which males and females assume in cross-sex conversations have any effect on the process of SLA.

Similarly, it was demonstrated in this study that other-initiated clarification requests, self-initiated clarification attempts, and the preference for self-initiated clarifications are important factors in the production of MCO. This, in turn, enables interlocutors (despite personal differences and cultural or linguistic backgrounds) to reach mutual understanding by producing comprehensible output and receiving comprehensible input. It follows, then, that it is possible to conclude with confidence that in those instructional settings in which these requirements are not met (i.e., settings which do not provide opportunities to negotiate the meaning, to receive other-initiated clarification requests and attempt self-initiated clarifications, to test out hypotheses about the TL, to use learned knowledge in contextualized meaningful use and to move the learner from semantic analysis of the TL to a syntactic analysis of it), SLA will be hindered and L2 learners deprived of opportunities to receive adjusted comprehensible input and to produce (modified) comprehensible output.

Notes:

1. Although no precise attempt was made to isolate and define native-like utterances, it can be assumed that successful production of MCO is in fact an approximation towards native-like speech norms by Pica (1988) and argued by other researchers (such as Schachter 1984, 1986, Sato 1986, Hatch et al. 1986, Brock et al. 1986). For example,

in Pica's (1988) study, it was found that in 91% of successful self-adjusted comprehensible production, the output approximated to native-like forms. Moreover, it is possible to argue that successful MCO production is an indication of successful native-like approximation since in most cases a repair which is target language native-like is the only acceptable successful repair-type.

2. As reported by Hatch (personal communication), in computer modelling, Gazden uses a modified Connectionist and Augmented Transition Network system in order to get around the necessity of hypothesizing some sort of language-specific acquisition device.

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Appendices

Appendix 1:

The Picture-Dictation Activity

A:

1. Ask B to sit with his/her back turned away from you,
2. B must draw the picture you have only by listening to you describe it,
3. Do not let B see your picture,
4. Let B ask as many questions as he/she wants,
5. You can take as much time as you like to explain the picture to B. You will probably need 8-10 minutes to do it.

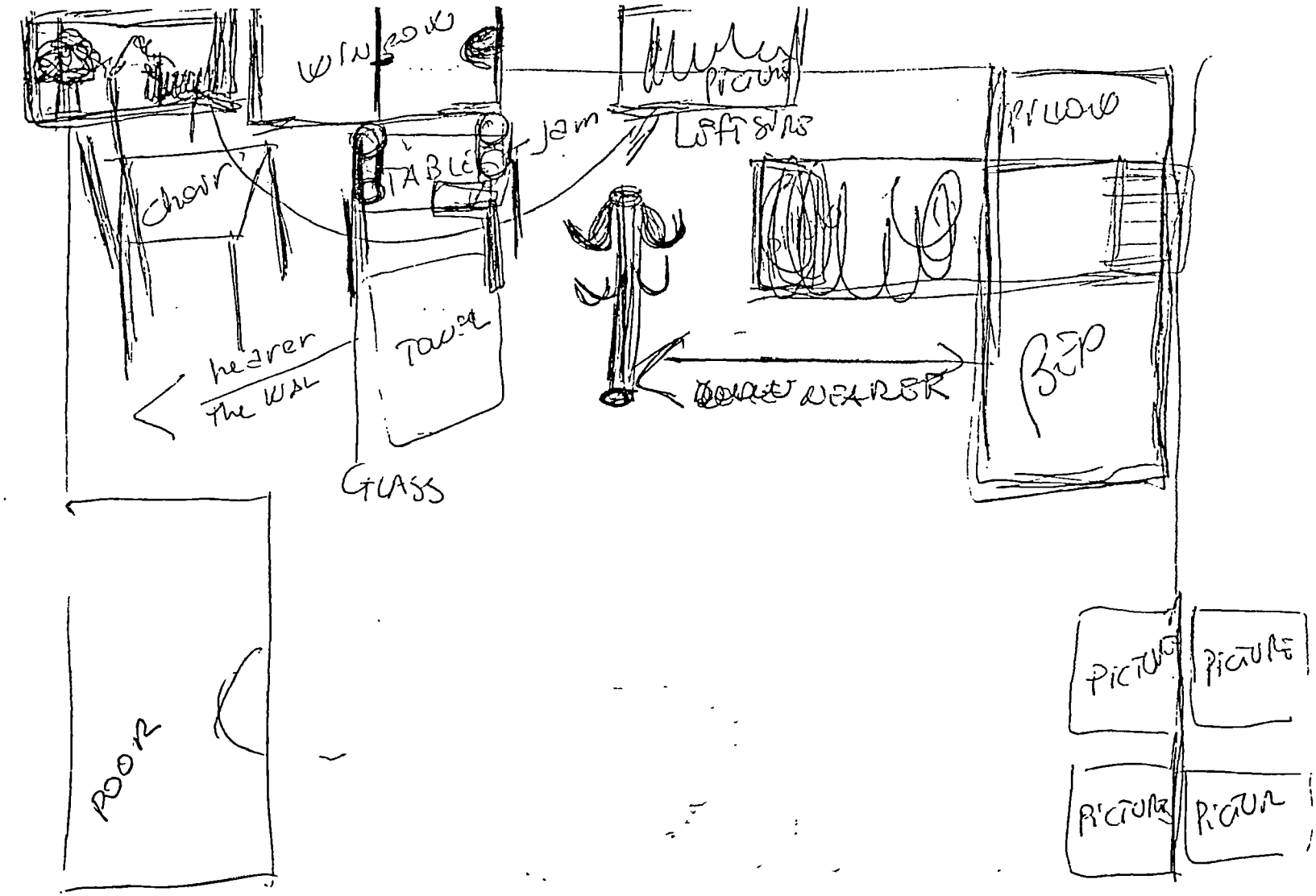
B:

1. Take a pencil and a sheet of paper,
2. Sit with your back to A,
3. Copy A's picture only by listening to him/her describe it,
4. Look only at your paper. Do not look at the picture A is describing to you,
5. You may ask as many questions as you want about the picture,
6. You can take as much time as you like to draw the picture. You will probably need 8-10 minutes to do it.

Vincent Van Gogh, La chambre de Van Gogh à Arles, 1889 - Paris, Musée d'Orsay

Sample drawing (Picture-Dictation: Task No. 1)

Sample drawing (Picture-Dictation: Task No. 14)



Appendix 2:

The Opinion-Exchange Activity

1. Read the following simple article until you understand it fully (perhaps you need to read it only once, or twice),
2. Have a 10-minute conversation in which you exchange opinions with your partner about the theme of the article. You could discuss, for example, whether the husband was justified in his jealousy of his wife or that the wife (Jacqueline) was not actually treated fairly by her husband -hence her desire for divorce is justified. You could also discuss whether the judge was just or not in granting the wife a divorce, and so on and so forth.

'Chauvinist' husband divorced

The "male chauvinism" of Mr Andrew Hulford earnt his wife Jacqueline a divorce yesterday.

Mrs Hulford liked to go out and meet people and have some independence. Mr Hulford, aged 44, believed a wife's place was in the home and her duty was to look after husband and children.

When Mrs Hulford, aged 33, dressed up to go out, her husband made "snide" comments about smartening herself up to try to attract other men.

If she met other men, he would become jealous, Mr Justice Sheldon said in the High Court Family Division. He "begrudged her any independent life".

The judge said that Mr Hulford had behaved "reprehensibly". His wife could no longer be expected to put up with "the plague of repetitive suspicion".

Although Mr Hulford denied behaving badly and that his marriage had broken down, Mr Justice Sheldon granted Mrs Hulford a decree nisi.

Mr Andrew Hulford "begrudged his wife Jacqueline any independence".

The couple, who have a young son and daughter and live in the same house at Elsenham, Essex, married in 1977. Both had been married before.

Mr Justice Sheldon said that about three years ago there was a "serious rift in their relationship". They stopped making love in 1982.

Mr Hulford said afterwards: "I don't see myself as having the attitudes of a Victorian husband.

"I do not accept that I was domineering or chauvinist. I just consider myself to be an ordinary English husband. I like to come home from work and see my wife and kids there. And I like my wife to stay at home with me in the evening. Any husband would.

"I still think there is hope for our marriage even after what has happend. I still love her."

Appendix 3:

The Decision-Making Activity

1. Read your hand-out until you understand it fully (perhaps you need to read it once or twice),
2. Get together with the other members of your group,
3. Try to draw up the constitution (or part of the constitution) of your newly independent country (Freedonia),
4. You have to reach unanimity with regard to every item you discuss,
5. You are not bound by the order in which the items are listed in the hand-out (i.e., you may discuss point 3 before points 1 and/or 2),
6. Take as much time as you like. You will probably need 45-60 minutes to draw at least part of the constitution of Freedonia.

STATE OF FREEDONIA

Meeting of the Grand Revolutionary Council

YOU are the members of the **GRAND REVOLUTIONARY COUNCIL OF FREEDONIA**, which has just won its independence after a revolutionary struggle with its colonial masters. You have met here today to draw up part of the CONSTITUTION OF FREEDONIA.

You must decide which propositions to accept, which to reject, and which you wish to amend.

Your final decisions must be unanimous. Remember that the future and fate of FREEDONIA is in you hands.

It has already been agreed that one of the members of the council (i.e., one of you) will be chosen PRESIDENT of FREEDONIA, and that all other members of the Council will be Vice-Presidents.

You have to decide on the following questions:

1. Who will be elected a President.

2. The President will be elected for life or for a period of seven years.

3. Following the first Presidency, all other Presidents will be elected
(a) by the GRAND COUNCIL

or

(b) directly by the people

or

(c) by a parliament of Freedonia.

4. The decisions of the President will be supreme

or

The decisions of the Grand Council and the President will be supreme

or

The decisions of the Freedonian parliament will be supreme.

5. All persons who supported the colonial administration of the enemies of Freedonia will be
(a) executed

or

(b) exiled until be pardoned by the President

or

(c) given a general and immediate amnesty.

6. FREEDONIA will remain forever **neutral** in military and political affairs, and will join no alliances such as NATO or WARSAW pacts.

Appendix 4:

Samples from transcripts, representing NS/NNS and NNS/NNS dyadic encounters and group interaction. The samples taken from the three main tasks of the study listed in appendices 1, 2 & 3 above, namely, picture-dictation (PD), opinion-exchange (OE) and decision-making (DM) (for the mother tongue and nationality backgrounds of nonnative speakers, see Chapter 5.2).

Sample (a):

Picture-Dictation: Task No. 1
Karen (female NNS) & Sarah (female NS)

NNS: on the table there's two fask (low voice) two fask and a cup (1.0) annnd somethin somethin I don't know what to
NS: two two what
NNS: two fas kfas
NS: what is it for
NNS: for for fowers
NS: oh for flowers yes
NNS: yes fask and then (2.0) just opposite the emmm bedt the bedt is on the on the right hand side of the picture and then just on the left hand side there is a dtoor dtoor
NS: (3.0) right
NNS: and then just in front of this door there is a chair another chair
NS: (1.0) chair in front of the door
NNS: yeah (3.0) ennn (5.0) annn (3.0) next jus a little bit beside the door there is a there is a cloat clo clo
NS: a coat
NNS: yeah a coat is hankt in the wall
NS: yeah which side of the door
NNS: is eh (3.0) left (2.0) left yeah if we if we we walk in the door in the in the left hand side and then in the wall
NS: oh um
NNS: (2.0) and then there is a a wall which have a window it's just ennn (2.0) it's difficult to describe just the wwo the direct wall understand (laughs)
NS: no
NS & NNS: (laugh)
NNS: there'is three walls (low voice) in the room
NS: yes
NNS: yes is a when we look at is er the one not not in the side is in the not in two sides not in the side of the door
NS: ahah
NNS: and not in the opposite side of the door
NS: right
NNS: yes on that side of the wall there is a window
NS: okay

Sample (b):

Opinion-Exchange: Task No. 1
Karen (female NNS) & Sarah (female NS)

NNS: I think both of them something right and something wrong
NS: emm
NNS: yes because if the woman is (0.8) the wife always go out and left his his husband eh (1.0) her husband and her son in the home (0.7) at home
NS: emm
NNS: it's it's not reasonable
NS: emm
NNS: fo fo how do you say it the the the man when when he come when he go when he go home he can't see her wife
NS: emm
NNS: it's it's too much fort for the the woman to go out is not reasonable is not acceptable you see
NS: yes
NNS: but he his way is also the man is also (low voice) how do you say (laughs)
NS: the man is what
NNS: (very low voice) the man is also (4.0) he's not he's not so bad actually but (2.0) oh maybe lack of communication I think the reason (laughs)
NS: yeah
NNS: yeah it's their age
NNS: (2.0) is it too
NS: (4.0) emm I think yes there is a lot of lack of communication isn't there
NNS: yeah
NS: (low voice) probabily because what
NNS: both of them is not hopes this things divorce really happended
NS: yes both the people didn't what sorry
NNS: yeah
NS: I didn't understand sorry
NNS: (laughs) just both of them not
NS: uhah
NNS: they they I think they they also want to live together just because of the lack of communication so that they they go to the lawsuit with divorce
NS: emm (clears throat)
NNS: this way

Sample (c):

Picture-Dictation: Task No. 14
Willem (male NNS1) & Flevio (male NNS2)

S1: okay (3.0) on the right hand side in the room you have a bed
S2: on the right
S1: on the right hand side you have the bed
S2: on on side in
S1: in the room inside yes
S2: ahh (1.0) inside
S1: inside the room on the right hand
S2: ahah
S1: you have the bed (2.0) a wooden bed
S2: bed
S1: a wooden bed
S2: wooden bed
S1: yes
S2: (4.0) okay
S1: right (2.0) next to the (1.0) bed
S2: ahh bed bed
S1: next to the bed on which you lay
S2: ah next to bed
S1: you have en chair
S2: ah (2.0) next on the right or on the left the bed
S1: er it's em on the emm right on the left of the bed
S2: on the left
S1: of the bed
S2: is a chair
S1: yes a chair (4.0) and er next to the chair on the left
S2: emm
S1: you have en em table
S2: em
S1: (2.0) a little table
S2: (3.0) very well (11.0) okay
S1: on the table
S2: ahah
S1: you have a bodtle
S2: a bottle
S1: yes a cup
S2: (4.0) a bottle and
S1: a cup
S2: cup
S1: cup yes
S2: cup cup er
S1: cup er er em a glass say a glass
S2: ahah cup

Sample (d):

Opinion-Exchange: Task No. 14
Willem (male NNS1) & Flevio (male NNS2)

S1: what do you think
S2: no as you say you sink you see old Jaguline have a have a (2.0) must have aaa freedon it's right no you don't agree you don't er agree with er Jaguline position
S1: I I agree that she might have freedom
S2: ahh
S1: but freetom waht sort of freedom
S2: ah
S1: that's that's not really clear what sort of freedom she wants
S2: emm
S1: (1.0) freedom to go out and to do everything she wants or what sort of freedom is she want does she want that's not clear to me
S2: emm yeah
S1: but if you think about this freedom
S2: yeah in general er I sink er I sink the wife eh have to (2.0) have to be freedom free
S1: yes
S2: okay (0.8) er for work
S1: yes
S2: and I don't agree that the woma that the place of woman is in the kitchen or in the in the house
S1: yes
S2: er (2.0) and er I sink er (2.0) the woman have the same same rights
S1: yes
S2: that the man
S1: yes
S2: okay er for work for get out get out
S1: yes
S2: and if the man if the man can to do er some somesing the woman er can to do
S1: yes
S2: too
S1: ahah

Sample (e):

Decision-Making Activity
(Group A: Six NNSs)

NNS1: Luis (m.)
NNS2: Willem (m.)
NNS3: Constanza (f.)
NNS4: Ahmed (m.)
NNS5: Ksenia (f.)
NNS6: Salma (f.)

S2: but but the main thing is that we have er five or six er vice-presidents in our case now
S1: emm
S2: and you have to elect one vice-president so it's really to be to be the parliament who has to elect elect the
S1: elect the president
S2: elect the president
S1: ahah
S2: because the parliament actually will be elected by the people
S4: people
S2: and then they can after forming the ministry they can elect the the the chairman
S1: emm
S2: who's who's I think the president (0.8) who will become the president
S1: yeah that's right
S6: yes
S4: (a nod of agreement)
S2: who he is
S3: yes
S4: Yes I agree with you
S1: so in this case the presint was er chosen by er
S4: by the council
S3,4,6: (confirmation) yeah
S1: then the vice-presidents are going to be elected or be chosen by the parliament
S4: nooo vice-president (2.0) eer I think that the vice-president will elected by the president itself
S1: but er all of all of vice-presidents (0.9) I suppose that we are going to have more than one vice-president
S3: no
S4: it can be one
S3: (low voice) only one
S6: it depends
S4: it depends
S6: how many ministries we have
S1: okay okay right what

S6: (xxx)
S4: (1.0) I I think that the vice-president is better to be one person
S1: but er
S2: that is it it's it's better to better according to our constitution
S4: ahah
S2: we all is er accepted to be vice-presidents
S1: (1.0) are we talking about the first president
S2: yes we are talking about the future
S6: the future yes
S2: what will happen in the future so in the future if the president will be elected by the parliament
S1: okay