

THE EFFECT OF TASK VARIATION IN TEACHER-LED GROUPS
ON REPAIR OF ENGLISH AS A FOREIGN LANGUAGE

By

RICHARD FRANKLIN BERWICK

B.A., The University of California, Berkeley, 1966
M.Ed, The University of British Columbia, 1979

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Department of Administrative, Adult and Higher Education

The University of British Columbia
Vancouver, Canada

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ABSTRACT

An experiment was conducted to determine how learners and teachers of English as a foreign language in Japan cooperatively attempt to improve the comprehensibility of their talk in English during performance of various conversational tasks. The basic practical issue under study was the possibility that certain kinds of teacher-led groups and tasks would be more effective in generating repair and negotiation of the language by which tasks are accomplished than others, and that these group-task combinations might eventually be employed as alternatives to traditional teacher-fronted forms of foreign language instruction.

The study was operationalized in a 2 x 5 between-and-within subjects, repeated-measures analysis of variance design. Two, six-dyad, teacher-led groups--homogeneous (Japanese teacher/Japanese learner) and mixed (native English speaking teacher/Japanese learner)--were formed in order to compare the frequency of 12 repair exponents generated during performance of five tasks. Teaching goals were represented in two tasks, instruction in use of the string-searching function of a laptop computer 1) with and 2) without the computer physically present. Non-teaching (social and cooperative problem-solving) goals were embodied in three additional tasks, 3) free discussion, and construction of a Lego (snap-together) toy accomplished with participants facing 4) away from and 5) towards each other. Task categories were also divided into experiential and

expository activities (respectively, Tasks 2 and 5, and Tasks 1 and 4) following a model for use of reference in English. Experiential dyadic activity was related to the occurrence of exophoric (pointing out) reference and expository dyadic activity to the incidence of anaphoric (pointing back) reference in the task transcripts.

Results of the analysis of variance indicated that while tasks differed on the basis of repair and reference, the groups did not: Dyadic talk was more responsive to the nature of the task than to the language background of the teacher. Further analysis suggested more frequent and elaborate repair during tasks which combine non-teaching goals and experiential processes as compared with tasks emphasizing teaching goals and expository processes. Qualitative analysis of task transcripts supported this distinction and elaborated specific discourse functions for such repair exponents as referential questions and confirmation checks which characteristically co-occur in conversational discourse.

Based on these findings, it was concluded that Japanese teachers are capable of generating appropriate conversational repair in dyadic interaction with learners largely on a par with their native English-speaking counterparts. To this extent, their potential contribution to learners' acquisition of a foreign language is of an equivalent value. Furthermore, teacher-led small groups can

be effective contexts for generating a rich supply of conversational repair and thus should be considered as alternatives to traditional teacher-fronted foreign language classroom instruction. Finally, tasks which support achievement of social and problem-solving (i.e., non-teaching) goals through experiential activity are effective contexts in which normal forms of conversational repair can be generated. Since such tasks can be adapted easily to classroom settings, they merit consideration among the range of task options available to teachers and other instructional planners.

TABLE OF CONTENTS

	Page
ABSTRACT.....	ii
TABLE OF CONTENTS.....	v
LIST OF TABLES.....	x
LIST OF FIGURES.....	xii
ACKNOWLEDGEMENTS.....	xiii
CHAPTER 1: INTRODUCTION.....	1
CHAPTER 2: FOUNDATIONS OF THE STUDY.....	10
Foreigner Talk (FT).....	10
Foreigner Talk and Second Language Acquisition (SLA).....	14
Foreigner Talk in Instructional Settings.....	21
Interlanguage Talk (IT).....	26
Dimensions of Task and Interlanguage Talk.....	30
Conceptual Dimensions of the Study.....	39
Repair.....	39
Task.....	42
Reference.....	50
Summary.....	57
CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY.....	60
The Research Design.....	60
Assumptions and Rationale.....	60
An Overview of the Design.....	63
Descriptive Measures and Dependent Variables used in the Study.....	67
Research Questions and Hypotheses.....	76

TABLE OF CONTENTS (cont'd.)

	Page
General Strategy for Data Analysis.....	80
Methodology.....	83
Selection and Treatment of Subjects.....	83
Collection and Coding of Data.....	86
Preliminary Treatment of the Data.....	98
Summary.....	103
CHAPTER 4: QUANTITATIVE ANALYSIS OF THE DATA.....	104
The Descriptive Features of Talk by Group and Task....	104
The Analysis of Variance:	
Repair by Group and Individual Task (H1-H2).....	115
Clarification Request: CCLAR.....	116
Comprehension Check: CCOM.....	117
Confirmation Check: CCON.....	118
Definition: DDEF.....	120
Display Question: DDQ.....	121
Echo: EECH.....	122
Lexical Uncertainty: LLEX.....	123
Other-expansion: OOEXP.....	125
Other-repetition: OOREP.....	125
Referential Question: RRQ.....	126
Self-expansion: SSEXP.....	127
Self-repetition: SSREP.....	128
Anaphora: AANA.....	132
Exophora: EEXO.....	133

TABLE OF CONTENTS (cont'd.)

	Page
The Analysis of Variance: Repair and Reference by Group for Combined and Selected Tasks.....	136
Repair During Experiential and Expository Activity (H3).....	137
Anaphoric Reference During Experiential and Expository Activity (H4a).....	141
Exophoric Reference During Experiential and Expository Activity (H4b).....	143
Summary.....	145
CHAPTER 5: DISCUSSION OF THE ANALYSIS OF VARIANCE.....	148
The Use of Repair by Group and Task.....	148
The General Lack of Group Differences.....	148
The Relationship of Repair and Task: Allocation of Repair to Teaching and Non-teaching Tasks.....	150
The Use of Reference by Group and Task.....	157
Specific Allocations of Reference to Task.....	159
Repair During Combined and Selected Tasks: Towards a Framework for Complementary Task Structures.....	161
Reference During Combined and Selected Tasks.....	166
Anaphora During Experiential and Expository Tasks.....	167
Exophora During Experiential and Expository Tasks.....	168
Summary.....	169
CHAPTER 6: QUALITATIVE ANALYSIS OF THE TASK TRANSCRIPTS.....	173
Display and Referential Questions.....	174
COM2: The Instructional Demonstration Task.....	175

TABLE OF CONTENTS (cont'd.)

	Page
DIS and LEG2: Discussion and Cooperative Problem-solving.....	183
Display and Referential Questions: Summarizing the Contrasts Between the Teaching and Non-teaching Tasks.....	197
Repair in Complementary Task Structures.....	201
Group 1: Definitions and Expressions of Lexical Uncertainty.....	202
Group 2: Confirmation Checks and Referential Questions.....	209
Summary.....	215
CHAPTER 7: SUMMARY, LIMITATIONS, IMPLICATIONS AND CONCLUSION.....	220
Summary	220
Conclusions Based on the Analysis of Variance.....	223
Conclusions Based on the Analysis of Transcripts.....	226
Limitations of the Study.....	229
Implications for Educational Practice.....	232
Implications for Task-based Research.....	236
Conclusion.....	237
REFERENCES.....	239
APPENDICES (A-K).....	247
A: Invitation for Teachers to Participate in the Research.....	248
B: Invitation for Learners to Participate in the Research.....	249
C: Statement of Informed Consent.....	251

TABLE OF CONTENTS (cont'd.)

	Page
D: English Language Proficiency Tests used to Select Subjects.....	253
E: Instructions to Raters and Index of Dependent Variables.....	256
F: Transcription Conventions.....	265
G: ANOVA <u>F</u> ratios for Selected Transformed and Untransformed Variables Listed in Table 3.....	266
H: Significant Repair Categories and Sources of Variance for Experiential and Expository Tasks Using LEG1 as the Expository Stem.....	267
I: ANOVA Tables Comparing Experiential with Expository Tasks (COM1 vs. LEG1 + COM2).....	268
J: ANOVA Tables Comparing Experiential with Expository Tasks (COM1 vs. LEG2).....	271
K: Means and Standard Deviations for Mixed- and Homogeneous-group Tasks.....	274

LIST OF TABLES

Table	Page
1	Summary of Conditions for Testing Hypotheses Relating to Group, Task, Reference and Repair.....79
2	Level of Homogeneity Within Groups by Dependent Variable.....99
3	Comparison of Selected Transformed and Untransformed Variables by Significance of ANOVA Effects.....101
4	Means and Standard Deviations for Word-based Measures of Conversational Activity by Mixed-group Task.....106
5	Means and Standard Deviations for Word-based Measures of Conversational Activity by Homogeneous-group Task.....108
6	Means and Standard Deviations for Utterance-based Measures of Conversational Activity by Mixed-group Task.....110
7	Means and Standard Deviations for Utterance-based Measures of Conversational Activity by Homogeneous-group Task.....111
8	Means and Standard Deviations for Turn-based Measures of Conversational Activity by Mixed-group Task.....112
9	Means and Standard Deviations for Turn-based Measures of Conversational Activity by Homogeneous-group Task.....114
10	Effects of Group Membership and Task on Clarification Requests.....116
11	Effects of Group Membership and Task on Comprehension Checks.....117
12	Effects of Group Membership and Task on Confirmation Checks.....119
13	Effects of Group Membership and Task on Definitions.....120
14	Effects of Group Membership and Task on Display Questions.....121

15	Effects of Group Membership and Task on Echoes.....	122
16	Effects of Group Membership and Task on Lexical Uncertainty.....	124
17	Effects of Group Membership and Task on Other-expansion.....	125
18	Effects of Group Membership and Task on Other-repetition.....	125
19	Effects of Group Membership and Task on Referential Questions.....	126
20	Effects of Group Membership and Task on Self-Expansion.....	127
21	Effects of Group Membership and Task on Self-repetition.....	129
22	Significant Repair Exponents and Sources of Variance for all Tasks.....	130
23	Effects of Group Membership and Task on Anaphoric Reference.....	133
24	Effects of Group Membership and Task on Exophoric Reference.....	133
25	Significant Reference Categories and Sources of Variance for All Tasks.....	135
26	Significant Repair Categories and Sources of Variance for Experiential and Expository Tasks Using COM1 as the Expository Stem.....	139
27	Effects of Group Membership and Selected Tasks on Anaphoric Reference: Contrasting LEG2 with COM1 (EXPER-EXPOS2).....	142
28	Effects of Group Membership and Selected Tasks on Exophoric Reference: Contrasting LEG2 and COM2 with COM1 (EXPER-EXPOS1).....	144
29	Effects of Group Membership and Selected Tasks on Exophoric Reference: Contrasting LEG2 with COM1 (EXPER-EXPOS2).....	144

LIST OF FIGURES

Figure		Page
1	Range of contextual support and degree of cognitive involvement in communicative activities.....	45
2	Extending the Knowledge Framework to problems in observational research.....	54
3	Factorial design and major conceptual distinctions used in the study.....	64
4	Plot of means by task for CCLAR.....	117
5	Plot of means by task for CCOM.....	118
6	Plot of means by task for CCON.....	119
7	Plot of means by task for DDEF.....	120
8	Plot of means by task for DDQ.....	122
9	Plot of means by task for EECH.....	123
10	Plot of means by task for LLEX.....	124
11	Plot of means by task for RRQ.....	127
12	Plot of means by task for SSEX.....	128
13	Plot of means by task for SSREP.....	129
14	Plot of means by group and task for AANA and EEXO.....	134
15	Plot of means by group and experiential-expository tasks for SSREP.....	140
16	Plot of means by group and experiential-expository tasks for AANA.....	142
17	Plot of means by group and experiential-expository tasks for EEXO.....	145
18	Allocation of four repair exponents to complementary task structures.....	164

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CHAPTER 1:

INTRODUCTION

This study is about the ways teachers and learners of English as a foreign language help each other to keep their talk in the language comprehensible. It is also about the variability of these efforts during performance of different conversational tasks in small, teacher-learner groups.

Three observations form the basis of the study.

The first is that English is regularly used around the world by non-native speakers (NNSs) to communicate with each other: by Japanese and Kuwaiti technical specialists to repair a malfunctioning hydraulic motor, by medical doctors from third-world countries attending an international conference to exchange information about their specialization, by multi-national residents of expatriate communities to pass the time of day. This observation is not the same as saying that English is a popular language, or spoken by a large number of people or that many people have studied it in school. It is more of an assertion that NNSs of English find it a useful medium for conducting the various facets of social life--of exchanging information, expressing feelings and opinions, solving problems--and that they are able to do so outside of any direct experience in cultures in which English is natively spoken.

The second observation relates to the first, but extends it into the dimension of use: NNSs frequently learn

English, or, for that matter, any language not acquired as a mother tongue, during attempts to use it with other NNSs in settings completely unrelated to second or foreign language instruction. This may seem an odd assertion to make until it is realized that language is characteristically acquired during use, during verbal and physical interaction between speakers and hearers, and that, on a global scale, foreign language acquisition which occurs under conditions of formal classroom instruction is a relatively rare event. The usual perception of classroom instruction is that instruction precedes learning which in turn precedes use for ordinary communicative purposes. The social worlds outside the classroom setting, however, make it possible to turn this procedural line virtually on its head, so that use, or at least attempted use, becomes the vehicle for learning. In this view of language learning, participants in conversations may function as "teachers", as interlocutor-informants, who negotiate and repair their talk as a matter of course during elaboration of its pragmatic structure.

The final observation extends the second. When language is used for normal communicative purposes, it is very unlikely that language per se becomes the object of discussion. With the exception of some obvious examples (an international convention of linguists, perhaps), extra-classroom use of a foreign language is most often concerned with things other than language.

By contrast, it is most unusual to find foreign

language instruction which does not focus explicitly on the language to be taught and learned, most typically on the syntax and lexis which form the content basis for instruction in a foreign language. Beyond the central role of this emphasis on language rather than on other areas of content in foreign language classrooms, however, is the more fundamental concern in educational systems generally with the structure and organization of instruction. Even when language and content are merged into a common syllabus, it is the traditional teacher-fronted lesson which contextualizes the use of language in the classroom and has specific consequences for the ways in which learners may employ it.

These observations are intended to suggest the outline of a study concerned with how teachers (both native speakers and NNSs of English) and learners (NNSs of English) employ the language in various dyadic settings of potential use to planners of foreign language instructional syllabuses. These settings range from those which most resemble teacher-led, content-based instruction to those which resemble the kind of information exchange and problem-solving which occur when social, non-instructional goals, predominate. The focus of the study is repair, defined broadly here as the ways interlocutors use language to help themselves and each other make sense of their discourse as it unfolds. The central purpose of the study is to understand how learners and teachers repair each other's talk during performance of

tasks expressly organized to accomplish instructional and non-instructional goals. A secondary, related purpose is to distinguish among tasks on empirical grounds--to propose a framework for the choice among teacher-led tasks which may eventually be of use to educational planners in designing acquisition-rich environments in foreign language classrooms.

Why repair within NNS-NNS discourse is worth studying is the point of the discussion to follow in Chapter 2, the foundation of the entire study. For the moment, however, it may be useful to note that a small body of evidence and argumentation points to the potentially beneficial effects of NNSs cooperatively attempting to repair their talk in small groups on their acquisition of a second language (Duff, 1986; Gass & Varonis, 1985b; Porter, 1983, 1986; Rulon & McReary, 1986, Varonis and Gass, 1985). According to these studies, it is unscripted interaction between NNSs, and to a lesser extent between native speakers (NSs) and NNSs, which seems to produce the conditions for negotiation and repair of the discourse (much as is the case with ordinary conversational activity) through such tactics as requests for clarification and indications of lexical uncertainty. Behind this level of discussion in the literature, however, is a widely held assumption (asserted in deductive terms in Long, 1981; see also Long, 1983a, 1983b, 1985) that as opportunities for negotiation and repair in a second language increase, the comprehensibility

of the language to which a learner attends also increases. Given sufficient interaction of this sort, learners eventually acquire various forms of grammatical, pragmatic and strategic competence which can be said to comprise second language competence. Taken together, these forms of competence comprise a level of socialization which is unlikely to be achieved through focusing the attention of language learners on the formal properties of a target language.

Along these lines, a number of second language acquisition studies have pointed out the relative inefficiency of second language instruction conducted by teachers in traditional roles as directors of verbal exchange in the classroom (Long, Adams, & Castanos, 1976; Long & Porter, 1985; Long & Sato, 1983; Pica, 1987; Pica & Doughty, 1985). Unfortunately no studies have examined systematically an alternative role for the NNS teacher of English as a conversational participant and problem-solver in cooperation with NNS learners--the kind of role which is frequently performed by NNSs in commercial, technical and social exchanges around the world. Moreover, none has compared the differences in repair behavior, if any, which might be found between groups which contain native and non-native teachers of English, in addition to non-native learners. Although it may be interesting to speculate about NNSs as prime candidates for "teachers" of language through non-linguistic content, native speakers are

typically viewed as having the advantage as teachers because of their native competence. Studies focused specifically on this point may help foreign language policy planners to formulate policy based on empirical research.

In addition to approaching some of these unresolved issues in second language acquisition research and policy planning, there is also the opportunity to apply recently developed models of the forms of discourse occurring in first and second language instructional situations (Cummins, 1983; Mohan, 1986) to problems in foreign language instructional planning. It is still very much an open question as to which communication contexts and activities in classrooms best promote the learning of foreign languages. Although it is now fairly unexceptional to assert, for example, that negotiated interaction is useful for language acquisition, questions remain over the particular forms of talk which various activities may engender. How might foreign language classrooms be organized, for example, to promote the kinds of verbal interaction believed to be at the basis of second language acquisition?

Given this sort of planning problem, Mohan's (1986) formulation of verbal activity in educational settings, ranging from discourse which emphasizes "general, theoretical knowledge" on the one hand to "specific, practical knowledge" on the other (p. 40), becomes a useful point at which to initiate the research. This study

examines the evidence of repair within a largely theoretical discourse/practical discourse framework. It thus attempts to apply a system for thinking about second language educational discourse to a practical problem encountered when planning the foreign language instructional syllabus: establishing criteria for organizing talk in foreign language classrooms.

Chapter 3 describes the study's methodology; its main function is to detail the pattern within which the study's five hypotheses are operationalized. Accordingly, a 2 x 5 repeated-measures factorial design is outlined at the beginning of the chapter and related to the fundamental concepts and studies discussed in Chapter 1. The twelve repair exponents and two forms of conversational reference which serve as dependent variables in the study are examined in considerable detail. Because the study is based on an experimental design, special emphasis is placed on the procedures and strategies employed to carry it out.

Chapter 4 begins with a discursive summary of the means and standard deviations for nine, non-inferential descriptive codings appended to the task transcripts, including word-based, turn-based and utterance-based measures of talk during the tasks. The major function of the chapter, however, is to report the results of the tests of the hypotheses outlined in Chapter 2 and carried out through analysis of variance, the quantitative methodology by which the dyads' production of repair and reference on

five tasks is compared.

Chapter 5 discusses and interprets the results following the topical focus of each research question. The major points raised during the discussion include a rationale for allocation of repair and reference to the various tasks and a distillation of the repair exponents into complementary task structures. The notion of complementary task structures is put into the perspective of a tentative, exploratory framework for predicting how tasks in educational settings influence the production of repair.

Chapter 6 provides a qualitative analysis of the task transcripts. This discursive treatment of repair extends the results of the quantitative analysis by focusing on the the functional qualities of the most salient repair exponents produced during particular tasks. Formal and functional comparisons between exponents are made with extensive reference to the transcripts. Core groups of repair exponents allocated to the complementary task structures are examined as co-occurring units within the transcripts and related to the goals and procedures of the tasks in which they are characteristically found.

Chapter 7 summarizes and concludes the study. Because the study is of potential use to applied linguists and to others interest in problems of foreign language instructional design, attention is directed to its limitations and implications for educational practice. Finally, special encouragement is offered to teachers who

wish to undertake their own task-based studies of problems in foreign language education.

CHAPTER 2:

FOUNDATIONS OF THE STUDY

This chapter summarizes conceptual and empirical work accomplished in the areas of foreigner talk, interlanguage talk (talk between learners of a second or foreign language), repair, task and reference. The discussion will emphasize the significance of the work to this study and prepare the ground for a description of the research design and methods in Chapter 3.

The nature of task and its relationship to conversational repair will be closely examined, as will the bases for selecting task categories employed during implementation of the research design.

Foreigner Talk (FT)

Ferguson's seminal characterizations of FT (1971, 1975) are important contributions to current understanding of how native speakers (NSs) and NNSs communicate with each other. Ferguson (1971, p. 143) described FT as "a register of simplified speech . . . which is used by speakers of a language to outsiders who are felt to have a very limited command of the language or no knowledge of it at all." FT is thus geared to an appraisal of the NNS interlocutor which the NS makes during conversation, very probably during the first moments of contact but also following the NS's assessment of the NNS's comprehension of the ongoing discourse (see also Gass and Varonis, 1985b).

Ferguson (1975) has also described how NSs of English adapt their speech to NNSs, or at least how NSs would adapt, given a set of constraints on the speech situation. The study is an indirect approach to the use of FT in the sense that the NSs in the study, all members of a sociolinguistics course, were asked to rewrite 10 sentences in ordinary English as if they were speaking them on behalf of their NS group to a group of uneducated, non-European foreigners. Ferguson also excerpted sixty-one sentences from C. S. Lewis' novel Out of the Silent Planet. These sentences were selected because they exemplified speech of an Englishman speaking English foreigner talk to Martians, that is, the novelist's concept of FT. The excerpted sentences were then compared with the 10 sentences modified for native-foreigner communication.

The results are interesting in that they presage some of the actual modifications described in later empirical studies (e.g., Freed, 1978, below). Ferguson found several major categories of modification both in the novel and on the re-writing tasks--omissions, expansions, and replacements or rearrangements. Examples of omission included dropping the definite article 'the', omitting various forms of the verb 'to be', avoiding inflectional suffixes signalling case and number, and elimination of coordinating and subordinating conjunctions. Expansions included addition of 'you' to imperatives, partial repetition of initial sentences or phrases, and addition of

tags (you come, OK?, for example). Replacements included substituting 'no' for all negative constructions (I no understand, for instance)--but 'not' for contracted negative forms, changing normal nominative pronouns to accusative forms (me Tarzan, you Jane, an unlikely utterance in ordinary conversation!--see Hatch 1983, p. 175f), lexical substitution and analytic paraphrase (one day gone to replace yesterday, papa for father), unmarked or more frequently occurring synonyms (take for carry), and decomposition of words into phrases with similar semantic content (which place for where, big head for leader).

On the basis of the limited body of evidence available to him, Ferguson speculated that NSs acquire the FT register as children and retain the register for special situations of contact with native speakers of another language (that is, "foreigners"), modifying their speech in a systematic, rule-governed way (FT as a conventionalized use of language, (Ferguson, 1975, p. 11). He did not, however, examine the possible functions of FT as a vehicle for language input which would encourage acquisition of a second language by the NNS, nor did he explore the communicative value of simplification by the NS.

In an exhaustive study, Freed (1978; see also Freed, 1980) examined the structural and functional qualities of FT produced in 11, two-member conversation groups. The study drew extensively from Newport's (1976) data on English baby talk or motherese, the simplified register adults employ

with infants acquiring English as their first language. Freed compared FT with native talk (NT), i.e., NS's speech in casual conversation with other NSs, NT with baby talk, and FT with baby talk.

Using the utterance as the basic unit of speech segmentation and the number of S-nodes per utterance and per sentence (measures of propositional complexity based on the number of main verbs in the segment under analysis), Freed concluded that English FT is in fact a register differing from normal English in terms of the relative frequencies of various forms and functions (1978, p. 235). She found, for example, that FT contained significantly more sentence fragments and stock expressions, and fewer grammatically acceptable utterances, than NT. In terms of syntactic complexity, FT had significantly fewer S-nodes and sentences per utterance, whereas the mean length of utterance was significantly longer in NT. Similar results obtained at the sentence level: fewer S-nodes per sentence and shorter mean length of sentence. Americans talking to foreigners used significantly more Wh- and Yes/No questions, but far fewer declarative sentences than Americans talking to other Americans. Further analysis revealed that the Yes/No questions employed during FT were significantly more likely to have no subject-auxiliary inversion, and to contain deletions of do and/or you, than NT.

Freed's functional analysis highlighted information exchange as the main purpose of both FT and NT, although

behavior indicating a need to keep the conversation going was especially evident in FT. For example, NSs speaking to NNSs used more conversation continuers (e.g., mmm, really) to show interest in or attention to their partner's utterances undergoing a sometimes tortuous construction. FT, moreover, was much more likely to be clarified than NT. NSs' attempts at clarification included repeating previous utterances in whole or in part, and paraphrasing previously used words and phrases. NSs engaged in FT also emphasized such conversational support as supplying a word or phrase to the NNS when needed.

Freed's discussion of naturally occurring FT stressed the underlying functional similarity of FT and NT, in addition to the specific dissimilarities, and thus supported Ferguson's earlier characterization of FT as a register (rather than a dialect) which, she noted, is intended by its users to improve the quality of information and social exchange during a particular conversation. Unlike the control and directive functions of baby talk used in mother-infant exchanges, FT is "motivated by the need to initiate and maintain conversation appropriate to the social and cognitive presence of . . . foreign partners. That is, the Americans saw their foreign partners as conversational peers" (p. 236).

Foreigner Talk and Second Language Acquisition (SLA)

This notion of interaction between individuals with developed cognitive abilities and the competence to explore

topics freely through verbal exchange is also central to the FT research which focuses on SLA. Krashen (1980, 1982), for example, argued that NS input directed to learners is made more comprehensible through conversational negotiation and eventually thus leads to SLA. Long (1980, 1981), among others, even more emphatically emphasized the role of NS-NNS interaction which occurs during two-way conversational exchange in acquisition of a second language. Hatch (1983) outlined a middle position which puts conversational and classroom interaction at the source of input modifications leading to SLA, although the extent of negotiation and modification seems clearly related to such variables in the communicative environment as task (Crookes, 1986; Duff, 1986; Long, 1980; Long, 1985a; Pica, 1987) and proficiency or apparent comprehension of the NNS as assessed by the NS (Long, 1983a; Long & Pica, 1986; Long & Porter 1985; Varonis & Gass, 1982). This emphasis on interaction--on its sources and effects--is largely missing from the early FT literature. More recent discussions, however, place NS-NNS interaction at the center of the SLA process (albeit by deduction more than by evidence) and stress the importance of NS responsiveness to the perceived conversational needs of the NNS partner (Long, 1983a). A related body of literature in the area of communication strategies has also found an interaction perspective useful in developing theoretical accounts of how learners use their interlanguage with interlocutors in communicative, problem-posing

situations to negotiate common understandings (Tarone, 1983; also Faerch & Kasper, 1983; Haastrup & Phillipson, 1983; Wagner, 1983).

The diversity of NS responsiveness is well documented by Long (1980, 1981; see also Scarcella & Higa, 1981). Although early description of FT tended to stress simplification of input to NNSs as the predominant means of conveying meaning during conversation, Long (1980), argued that simplification of input was only one type of modification NNSs are likely to make when speaking to NNSs. The more important level of conversational activity--important from the perspectives of both SLA and instructional methodology--was shown to be interactional modifications constructed cooperatively by conversational partners. Long found that questions occurred significantly more frequently in NS-NNS dyads than in NS-NS dyads during conversational tasks requiring exchange of information (two-way tasks). Questions typically took the form of confirmation checks, comprehension checks, clarification requests and other-repetition, and served to sustain the conversation by increasing the NNS's participation. Long also found significant differences between NS-NNS and NS-NS dyads in the frequency of self-repetitions and expansions of previously occurring utterances. Long explained that

NS-NNS interaction is characterized, among other things, by communication breakdowns. Confirmation checks, clarification requests, self- and other-

repetitions are all interactional resources available to the NS (and to NNSs) to repair the discourse when breakdowns occur. Comprehension checks, self- and other-repetition are among the devices NSs can use to avoid breakdowns, and so may be expected to be more frequent where communicative trouble is anticipated, as is the case with much NS-NNS interaction. (p. 152)

Finally, Long compared groups of tasks which required information exchange with those which did not. Again, he found a significantly greater frequency of the "repair and trouble-avoidance devices" (p. 152) in the information exchange group of tasks.

These results point to the range of modification speakers have at their disposal and actually do invoke to continue the exchange of information. Clearly NS input to NNSs in the form of simplified speech is not the only, nor even apparently most important, means of maintaining the NNS's accessibility to the target language. Long (1981, p. 275) makes the position in favor of modified interaction explicit: "participation in conversation with NS, made possible through the modification of interaction, is the necessary and sufficient condition for SLA."

Triggers to Modification of FT

Discussion of NS responsiveness has also turned to the question of what triggers or otherwise influences FT both prior to and during conversation. This specific kind of NS adjustment to NNSs was examined in Gass and Varonis (1984),

Gass and Varonis (1985b), Long (1983a), Long (1985a), Pica and Long (1986) and Varonis and Gass (1982). Gass and Varonis (1984) found that NNS speech is more likely to be understood, and thus less likely to be negotiated, by NSs who were familiar with NNS speech. This finding suggests that NSs who are teachers may treat the language of their NNS students differently--and thus modify their input differently--than NSs who have no special conversational experience with NNSs. Pica and Long (1986), however, found in general no relationship between years of teaching experience and such input features as the distribution of questions, statements and imperatives, and the length or syntactic complexity of teachers' utterances which are directed towards their NNS students. On the other hand, Pica and Long did find that experienced teachers use various other FT features more frequently than inexperienced teachers, including more yes/no questions and fewer Wh-questions, although experienced teachers employ one device of conversational adjustment, other-repetition, significantly more frequently than inexperienced teachers. The evidence is thus mixed on the question of whether the teacher's experience influences the kind and frequency of FT directed towards the NNS.

On the issue of how NS perceptions of NNS proficiency influence NS conversational adjustment, Varonis and Gass (1982) found that whereas such factors as NNS pronunciation and grammar seem to trigger modifications in the language of

NSs, the physical appearance of the NNSs does not. They concluded that NNS pronunciation and grammar were the major contributors to the comprehensibility of NNS speech to NS conversation partners. In other words, NNS's proficiency in the second or foreign language, as realized in pronunciation and grammar, seems to be one basis for NS's use of FT.

Comprehensibility of NNS speech as established through NS sampling of the NNS's pronunciation and grammar at the outset of a conversation, however, would seem to be only one among a number of sources of adjustment. Given the interactive nature of discourse in NS-NNS conversation, the level of comprehension which NSs attribute to NNSs during a conversation could also be a major factor leading to qualitative and quantitative adjustments in NS speech. Along this line of thinking, Long (1983a) has also examined the causes of NSs linguistic and conversational adjustments to NNSs, including the perceived foreignness of the NNS, features of the NNS's interlanguage, the NS's perception of the NNS's comprehension of the NS's speech, in addition to the NS's perception of the comprehensibility of the NNS's speech. Based on a summary of literature devoted to NS conversational adjustments to NNSs, Long argued that a combination of factors lead to adjustment--comprehensibility of the NNS's interlanguage, the linguistic qualities of the interlanguage, and, significantly, NS comprehension of the NNS. Comprehension, or the lack of it, occurs throughout a conversation and is at the basis of conversational

adjustment. It is the quality of a conversation as discourse, not as a collection of isolated utterances, which permits repair or avoidance of misunderstanding. Thus the feedback which NNSs provide during conversation is, as Long noted, an important source for NS evaluation of NNS comprehension.

What actually triggers NS adjustment when NNSs signal trouble during a conversation? In a study which controlled for the effects of grammar, vocabulary and physical appearance, and which responded to the issue of ongoing adjustment of FT discourse, Gass and Varonis (1985b) focused on the effect of NNS comprehensibility and proficiency as factors in NS speech modification. Their study used data from Abunahleh et al. (1982) in which eight NNSs at proficiency levels ranging from beginning to intermediate each made random telephone calls to NSs. The NNS callers followed a script of eight questions on food preparation and consumption, with the third and seventh questions requiring the caller to say Pardon me? to whatever the NS responded. This technique was designed to elicit a clarification from the NS and thus constituted a direct means of determining the quality and quantity of NS modification resulting from NS perception of NNS proficiency over the course of the conversation.

The study showed that the frequency of negotiation exchanges--"exchanges in which there is some overt indication that understanding between participants has not

been complete and . . . a resultant attempt to clarify the nonunderstanding" (Gass & Varonis, 1985b, p. 39)--is related to proficiency; NSs initiated negotiation routines about three times more frequently with low-level NNSs than with high-level NNSs. The quantity of speech, moreover, seems at least partially related to proficiency: Following the first request for clarification, significantly more speech was directed to high-level subjects than to low-level ones. Gass and Varonis suggested that this additional amount of speech resulted from a more severe reassessment of the high-level speakers' proficiency than of the low level speakers' proficiency. Thus the authors concluded that "perceived" comprehensibility triggers NS speech modification (p. 55), although it should also be noted that the comprehensibility NSs attribute to NNS speech during a conversation seems related to ongoing revisions of their initial perceptions about a speaker's proficiency--that is, to their perception of the NNS's comprehension.

Foreigner Talk in Instructional Settings

One final area of research into FT and what has come to be called foreigner talk discourse (Long, 1980, 1981, 1983a), is the study of talk in classrooms between NS teachers and NNS students. In general this line of research compares the discourse in teacher-fronted lessons, which ordinarily stress language instruction, with the non-instructional discourse occurring in small groups of NNS. For the present, however, this discussion will look only at

those characteristics of FT which other studies have associated with second and foreign language instructional settings.

Chaudron's (1983) study of FT in high school and university subject-matter classes for English as a second language (ESL) students examined how teachers simplified classroom language linguistically and cognitively (cf. Ferguson, 1971). Chaudron selected vocabulary, anaphoric ("pointing back") reference, topic development, explanations and questions for qualitative analysis. He found that teachers attempt to simplify vocabulary by elaborating on it and making it much more redundant than in non-ESL classrooms. He also noted, however, that elaboration can create new meanings for learners to deal with and thus lead to ambiguity. Simplification through anaphoric reference was particularly problematic. Although teachers apparently did not hesitate to use anaphoric pronouns, they tended to complicate the comprehensibility of their explanations by overuse of such pronouns and by assuming that students had learned the appropriate rules for relating referent to pronoun when, in fact, they had not. Similar problems were noted with regard to marking and changing topics, and simplifying instructions. Chaudron found, for example, that teachers' elaborations sometimes entailed excessive and confusing rephrasing or excessive redundancy.

Chaudron (1983) also found that teachers' "specific procedural" or "obliquely logical" questions (p. 135)

directed towards ESL students--presumably intended to simplify the structure of knowledge that a teacher wants to convey--often exceeded the ability of the ESL students to process the language directed towards them. Others have noted the higher frequency of questions in FT generally (Freed, 1978, for example) and of questions intended by teachers in second and foreign language classrooms to test learner' knowledge (see Long & Sato, 1983, summarized below) as compared with ordinary conversational and instructional settings. Chaudron, however, has additionally raised the issue of how accurately teachers are able to pitch their FT discourse to NNSs in instructional settings.

The frequency and functions of teachers' questions in second language classrooms was examined by Long and Sato (1983). The authors pointed out the importance of questions in FT discourse to sustaining NNS participation in conversation by signalling an open turn, making conversational topics clearer by "compelling" responses and, generally, in opening opportunities to modify the interactional structure of conversation. Classroom data comprising transcripts of six elementary level ESL lessons were compared with transcripts of conversations between NSs and NNSs in 36 dyads, or two-member groups. Among the total of 938 questions in the classroom corpus, Long and Sato found a significantly larger number of display questions than referential questions, i.e., questions for which the teacher already knows the answer over questions designed to

elicit unknown information or to check or otherwise clarify conversational material. Moreover, the frequency of display questions was significantly higher in the classroom speech than in the conversational dyads.

Other comparisons between the instructional and non-instructional settings showed further significant differences. Referential questions, for example, constituted more than three-quarters of the total number of questions in the NS-NNS dyads, but only 14 percent of the total number of questions in the ESL classes. At the same time, the teachers asked fewer questions overall than the NSs in conversational settings. Significant differences were also obtained for verbal marking of present and non-present temporal reference: The ESL teachers preferred verbs marked for present tense by a significant margin over NSs in the NS-NNS dyads. Long and Sato concluded that instructional talk in second language classrooms is a greatly distorted version of its NS-NNS counterpart in conversational settings and suggested that if the difference is important in terms of SLA, as they clearly think it is, further research be conducted to determine "how the interactional structure of classroom NS-NNS conversation can be changed" (p. 284).

Additional evidence of the relatively distorted nature of FT in instructional settings--relative to treatment of NS students in content area classrooms--was reported by Shinke-Llano (1983). Shinke-Llano examined teacher talk directed to both NSs and NNSs in fifth and sixth grade classes. The FT

directed to the students of limited English proficiency (LEP) provided significantly less interaction than the "normal" instructional register used for non-LEP students. The attention that LEP students did receive tended to be managerial rather than instructional, and, in general, much briefer than that received by their non-LEP counterparts.

This level and quality of FT suggests a conclusion similar to the ones reached by Chaudron (1983) and Long and Sato (1983) for adult-level instruction, namely that the instructional register which teachers typically employ for NNSs is qualitatively and quantitatively different from the largely well-modified variety of FT which occurs in non-instructional settings. Although findings have reported appropriate adjustment of the teacher's classroom speech to NNSs listening to stories (Henzl, 1974, 1979) and lectures (Wesche & Ready, 1985)--i.e., learners mainly attending to the teacher's expository behavior--the weight of evidence suggests, to the contrary, that FT in classrooms is a relatively inefficient medium by which to assist construction of discourse which is useful to language learners (see also Long, Adams, & Castanos, 1976; Long & Porter, 1985). FT occurring in natural or non-instructional settings seems better adjusted to ongoing discourse and to the NS's perception of the NNS's level of understanding, generalizations which suggest a possible role for non-instructional conversational tasks between NSs and NNSs in

second and foreign language classrooms.

The discussion so far has examined the nature and functions of FT in a variety of contexts and noted the uses of naturally modified NS speech in helping to sustain NNS participation in conversation. The NS's repair or avoidance of troublesome conversational material is part of this process (Long, 1980). However, the role of other NNSs as conversational partners and sources of input and interaction in a second or foreign language has not yet been considered. The possibility that NNSs could function in much the same way as NSs for other NNSs, and that they could contribute to a learner's acquisition of a second language, has received some attention in the literature. It is to this small but important body of literature that the discussion turns next.

Interlanguage Talk (IT)

Conversation between NNSs in a non-native language has been variously described as Interlanguage Talk (IT) (Krashen, 1980, 1981, 1982; Long & Porter, 1985), Interlanguage Communication (the term can also refer, non-specifically, to the developmental character of learners' talk to either NNSs or NSs--see Faerch & Kasper, 1983) and Learner Language (Porter, 1983). IT has received attention recently in the SLA literature because, like FT discourse, it apparently increases opportunities to negotiate meaning during conversational exchange, thus leading in principle to SLA. (No unambiguous evidence yet exists for this claim,

although most SLA researchers argue a strong case for the causative position of negotiated discourse in SLA. (See Long, 1981, 1985a). IT has also been examined for its potential as a pedagogical tool in second language classrooms, particularly as an alternative to teacher-fronted forms of delivering instructional material.

Studies of FT discourse, it will be recalled, have noted the relative inefficiency of FT used by teachers in second language classrooms in comparison with FT directed to learners in non-instructional settings. Can IT provide the same opportunities for interaction, negotiation of meaning and repair as non-instructional FT? What are some of the limitations of IT as a medium for possible second language acquisition and what are its limitations as a method of organizing instruction?

Porter (1983; also 1986) compared talk generated by dyads during problem-solving tasks at three levels of proficiency in English for specific characteristics of input, interaction and appropriateness. Six intermediate learners, six advanced learners and six native speakers of English were paired so that individuals spoke with others at their own level and at the other two levels. All learners were native speakers of Spanish. The 27 dyadic conversations centered on a frequently used instructional technique requiring individuals to rank order a list of solutions to a problem or items which could be used in the the solution of a problem ("You have just crash landed in

the Sonora desert" Porter, 1983, p. 217), and then to discuss their ranking with a conversational partner. Each participant negotiated a preferred solution for each of three different tasks with a different conversation partner. The tape recorded discussions were transcribed and rated by teams of judges for such qualities as comprehensibility by rater, fluency, pronunciation, grammaticality, and lexical precision and breadth. In addition, transcriptions of the discussions were coded and analyzed for total words, the percentage of words contributed by each participant, and the number of false starts (a greater frequency for this measure of fluency, Porter hypothesized, would restrict the listener's comprehension). The transcriptions were also coded for monitor--the speakers' attention to the quality of their own and others' speech (as measured by the frequency of self- and other-corrections of grammatical and lexical errors), other-repetition rate (a measure of comprehension), repair rate (a measure of negotiation in the discussion including clarification requests, confirmation checks, verifications of meaning, definition requests, indications of lexical uncertainty, and comprehension checks), and for the prompt rate (a measure of conversational cooperativeness and willingness to keep the conversation going).

Finally, Porter examined the appropriateness of learner talk in comparison with native-native talk as a baseline: To what extent had the learners acquired sociolinguistic rules as indicated by the occurrence of inappropriate talk

in their discussions? Porter's findings are of particular interest to instructional planners who have generally assumed (following Krashen, 1978, 1982) that NS speech constitutes the only source of high-quality language input available to learners in second and foreign language classrooms. Perhaps the most important finding of Porter's study was that learner-learner conversation, especially between learners at advanced and intermediate levels of proficiency, is at least as effective as NS-learner talk in terms of providing opportunities to repair or avoid misunderstanding, and to assist interlocutors in continuing successfully through a topic of mutual interest. Only a tiny fraction of the errors occurring during learner talk was repeated by a non-native conversation partner; many errors were successfully monitored and corrected by the partner.

Several of Porter's specific findings are worth reporting here. Regarding the interactional quality of IT, Porter found the rate of monitoring and such repairs as clarification requests, confirmation checks and comprehension checks to be essentially identical in both learner-learner and NS-learner conversation, and the rate at which learners prompted each other to be much higher than the rate at which they prompted NSs. On these points Porter (1986, p. 214) concluded: "both types of interlocutors [learners and NSs] are equally effective conversation partners. The finding for . . . prompts [however] suggests

that learners make better partners"

Comprehensibility during learner talk was significantly better than during NS-learner talk. Comprehensible input thus would seem to be assisted by IT when participants share the same interlanguage phonology. Moreover, input provided by the advanced learners speaking to other learners was significantly better in quality than that provided by NSs as measured by the judges' ratings. Learners at all levels, but particularly at the advanced level, produced significantly more language for other learners than for NSs--a finding which clearly suggests the potential benefit of IT as input in instructional settings.

One additional finding, however, showed IT to be a relatively inefficient means for language learners to acquire rules of sociolinguistic competence. Porter found that IT did not provide learners "socioculturally appropriate models" (p. 194) for the three language functions examined in the qualitative analysis: expressing opinions, agreements and disagreements. This suggests a special role for teachers in classrooms or for NSs outside the classroom, namely providing adequate sociocultural input for language learners who apparently are unable to provide it to each other.

Dimensions of Task and Interlanguage Talk

One-way and Two-way Tasks.

The effect of task on the quality of IT (particularly on the frequency of repairs undertaken during conversation

on task) has also been examined by Gass and Varonis (1985a) and Duff (1986), among others. (An extensive review of the literature on task, Crookes, 1986, will be examined in Conceptual Dimensions of the Study, below.)

Following Varonis and Gass' (1985) model describing the form and process of negotiation of meaning in nonnative discourse, Gass and Varonis (1985a) observed how one-way and two-way tasks made different communicative demands on intermediate-level NNSs in conversational dyads and thus influenced the quality of negotiated interaction. They defined a one-way task as "an interaction which involves the giving of information from only one participant to the other" (p. 149) and a two-way task as "an interaction which involves exchanges of information . . . exchanges in which both participants have information which must be shared in order to complete a given task" (p. 149). The dependent variable used in the study was the number of pushdowns, or indications of difficulty in understanding, initiated by a listener. Pushdowns were the basis of nonunderstanding routines--"exchanges in which there is some overt indication that understanding between participants has not been complete" (p. 151)--and were expected to vary with the task employed. The one-way task entailed one member of the dyad describing a picture while the other member attempted to reconstruct it without direct reference to the original picture (but with the feedback of the person describing it). The two-way task required the dyad members to piece

information together which they possessed individually towards solution of a crime; the members had to exchange information cooperatively if the crime were to be solved. The authors reported no significant differences between their one-way and two-way tasks. This result seems to contradict Long's (1980) findings in which two-way tasks resulted in significantly greater negotiated interaction (via comprehension checks, requests for clarification, etc.) than one-way tasks. The authors pointed out, however, that the level of shared assumptions distinguished the two sorts of tasks, with two-way tasks requiring less negotiation than one-way tasks (although, in their study, apparently not significantly less) because of the greater amount of information shared by the participants: As the amount of information independently possessed by participants increasingly overlaps, they have less need to share it during performance of the task. (Gaies, 1982 also makes this point, explaining that participants' shared knowledge of each other reduces the chance of conversational breakdown and dropping of topics.)

The explanation that participants' shared assumptions or knowledge reduces the need to negotiate over conversational "trouble" is attractive if not persuasive. However, it does not deal directly with the problem of what is being negotiated (information per se versus comprehensibility of the participant's talk--comprehensibility or lack of it being a focal issue in Long,

1980 and 1983, for example) or with the problem of directionality (one-way tasks can, arguably, require participants to negotiate significantly more than two-way tasks due to the relatively smaller number of assumptions which participants share). Thus, it is not clear whether negotiation over nonunderstanding in IT is a function of the degree of shared assumption permitted by a task or the need to share information in order to complete a task successfully (by definition, a characteristic of two-way tasks) or, perhaps, the need to make the language by which information is to be shared more comprehensible.

Convergent and Divergent Tasks.

Duff (1986) provides an additional view of the task-interaction relationship in IT, examining the degree to which dyadic tasks support shared-goal (convergent) or independent-goal (divergent) interaction. Like Porter (1983, 1986) and Gass and Varonis (1985a), Duff employed teacherless tasks in the form of cooperative problem-solving and debate. Unlike other researchers, however, Duff used two-way tasks exclusively in the study and thus did not attempt to replicate research which examined the effect of one-way and two-way tasks on repair behavior. Subjects in the study included four native speakers of Mandarin Chinese and four of Japanese. Quantity of input was measured by the number of words and c-units ("a word, phrase, or sentence that in some way contributed pragmatic or semantic meaning to a conversation", p. 153). Quality was measured by the

frequency of turns, questions and S-nodes (a measure of syntactic complexity; see Freed, 1978). Specific measures of interaction included comprehension checks, clarification requests, confirmation checks, collaborative checks ("explicit feedback or agreement or disagreement is sought", p. 152), in addition to several question forms. The interaction features were similar to those reported in Long (1980, 1981) Pica (1987), Pica and Doughty (1985), Pica and Long (1986) and Porter (1983) except for the elaboration of question types and the addition of collaborative checks.

Duff found that the debates (the divergent tasks) produced significantly more words per turn, fewer c-units, more words per c-unit and more S-nodes per c-unit than the problem-solving (convergent) tasks. Debate, in general, was thus found to produce longer and more complicated discourse than problem-solving. As for the interactive quality of the tasks, Duff found significantly more subject questions in the form of confirmation checks and referential questions in problem-solving than in debate, although task differences did not reach significance for comprehension checks and clarification requests. Ethnic differences were also noted, with the Chinese subjects taking more frequent turns and asking questions more frequently than their Japanese counterparts. This finding suggests that relatively voluble individuals may create the opportunities for their less voluble partners to participate in the negotiation of conversational material. Finally, with shorter turns and

more frequent and immediate feedback, Duff concluded that problem-solving was more conducive to SLA than debate, particularly with respect to the greater amount of questioning (and thus clarification of meaning) engendered by this task type.

The major implication of Duff's study is that tasks can be distinguished by the degree to which they stimulate cooperative, interlanguage exchange on the topic. Divergent tasks would seem to encourage a more expository, abstract and instructive approach to talk with conversation partners, whereas convergent tasks seem conducive to the frequent, cooperative exchange of conversational material which is made concrete and personally relevant from moment-to-moment. This distinction has also been discussed by Kramsch (1985) who noted the "dual nature of the language learning task" (p. 170) and the variation of tasks along the interaction continuum between "position-centered teaching and learning, . . . in which information is delivered and received . . . [and] person-centered communication, in which information is exchanged and meanings are negotiated" (p. 171).

Required versus Optional Information Exchange.

Kramsch's distinction is echoed in research conducted by Doughty and Pica (1986) and Pica (1987). Doughty and Pica compared tasks which required the exchange of information and tasks which left information exchange optional, in teacher-led, small (four-member) group and

dyadic settings. They found that the requirement of information exchange was the key variable in producing significantly more modified interaction in English (as measured by the frequency of clarification requests, confirmation checks and comprehension checks) in all settings, but that the NNS-NNS participation patterns in small groups and dyads produced much more modified interaction than those led by the NS teacher. Noting the large number of ungrammatical utterances (p. 322) in the various intermediate proficiency level student groups, however, Pica and Doughty cautioned that the teacher remains the only source of grammatical input ordinarily available to the learners. Beyond this caveat, which finds only limited support in the literature and must contend with contradictory evidence (Long, 1980, for example), the study's general conclusion was that it is the task-obligatory exchange of information, especially in but not limited to NNS groups, which seems to create the conditions for negotiated exchange of information and meaning.

Information Exchange versus Decision-Making Tasks.

These findings are consistent with those reported in Pica (1987) who contrasted the number of clarification requests, confirmation checks and comprehension checks (indicative of the degree of modified interaction) in teacher- and learner-directed groups for both decision-making and information exchange tasks. Pica found that teacher-directed participation was generally the least

productive of modified interaction. When contrasting the two sorts of task, however, Pica found much larger differences in both teacher-led and learner-led groups when information had to be exchanged in order to complete a task successfully than when members of a group simply discussed a problem. When participants were obliged to share information about the location of flowers on a board, modified interaction became the key to successful completion of the task. In addition, Pica noted the apparent influence of role relationships on the task-based talk when the task did not require an equal exchange of information among participants. The teacher's normally dominant status in the classroom or a given learner's ability to dominate a group's conversational time, for example, were less likely to restrict the occurrence of modified interaction when the task encouraged participants to exchange information on a more-or-less equal basis.

In summary, then, different tasks have been found to influence the quality and quantity of IT. Although Long (1980) found two-way tasks more effective than one-way tasks in generating negotiated interaction between members of NNS dyads, Gass and Varonis (1985a) found no significant differences between the two forms of task, noting that the degree of shared background and experience which learners bring to a task seems to control the characteristics of interaction. Recasting the distinction between task types, Duff (1986) found significant differences between tasks

which require learners to reach a common solution (convergent tasks) and those which encourage independent goals for each member (divergent tasks). Others, including Doughty and Pica (1986) and Pica (1987), have concluded that tasks can be distinguished on the basis of whether or not they require, and not merely invite, an exchange of information in order to be completed successfully. Thus, there is little consensus on how tasks can be clearly distinguished to serve predictive functions in second and foreign language research, although it is clear that the quality and quantity of IT is influenced by the nature of the task in which learners are asked to engage.

More generally, the organizing of NNS-NNS interaction has been found a serious alternative to NS-NNS exchanges in classrooms (Porter, 1983, 1986) and a source of input and negotiated interaction at least as effective as that which occurs in NS-NNS dyads. Instruction which is teacher-fronted, and maintains the traditional teacher-pupil status differences, has been found in some studies to produce an "inferior" and less focused version of FT, specifically in the dysfunctional use of display questions (see Chaudron, 1983; Long & Sato, 1983; also Doughty & Pica, 1986; Pica, 1987 for comparisons of teacher-fronted and small, NNS-NNS group conversational activity).

The discussion next moves to several key conceptual underpinnings for the study, examining in greater detail the nature and uses of repair, task and reference.

Conceptual Dimensions of the Study

Repair

The first conceptual field to be examined here is repair, a surprisingly mercurial term given its frequency of occurrence in the literature and uses as a measure of interactional adjustment. In general, repair has been viewed either as a process for negotiating conversational "trouble" (Gass and Varonis, 1985a, 1985b) or a related group of interaction strategies which participants use to improve the comprehensibility of their talk (Long, 1980; Porter, 1983, 1986). Other studies have distinguished between forms of repair which are essentially lexico-grammatical in nature and those which modify the propositional content of the discourse (Kasper, 1985; Porter, 1986; Schachter, 1985; Schwartz, 1980).

Schegloff, Jefferson, and Sacks (1977) characterized repair as "the self-righting mechanism for the organization of language use in social interaction" (p. 381) which occurs when conversational participants perceive a source of trouble in either their own or their partner's talk. Repair of anticipated or actually occurring trouble was distinguished from simple correction or replacement of error and found to be overwhelmingly the responsibility of the "trouble source". That is, self-repair is ordinarily preferred to other-repair, although Schegloff et al. speculated that other-correction for the not-as-yet competent

. . . appears to be one vehicle for socialization. If that is so, then it appears that other-correction is not so much an alternative to self-correction in conversation in general, but rather a device for dealing with those who are still learning or being taught to operate with a system which requires, for its routine operation, that they be adequate self-monitors and self-correctors as a condition of competence. (p. 381)

Indeed, Kasper (1985) not only found a preference for both other-initiated and other-completed repair in language-centered instruction (i.e., instruction dominated by the teacher), but also found the more conventional pattern of self-initiated and self-completed repair by NNSs during non-instructional discourse. The repair preference thus seems to depend on the context in which talk occurs. Although not specifically concerned with the context in which repair occurs, Porter (1983, 1986) reported higher rates of both self- and other-correction (monitoring) by NSs in conversation with NNSs, a finding in support of Schegloff et al.

These specific findings are largely related to the lexico-grammatical character of conversational repair (but see Schwartz, 1980 for a treatment of self- and other-repair in negotiated and instructional discourse). Of even more interest to the present study are the various exponents of repair which have been reported as contributing to interactional

modification. Here there is a well-studied, frequently replicated group of exponents, although the term repair is not yet routinely or consistently used to describe them. Long (1980), for example, found that NS-NNS dyads relied on such repair devices as confirmation checks, clarification requests, self- and other-repetition to repair breakdowns which had already occurred, whereas comprehension checks and repetition functioned to avoid breakdown. Porter (1983) grouped clarification requests, comprehension checks, verifications of meaning, definition requests and lexical uncertainties under repair. (Tarone (1983) has also described the latter three devices as exponents of the communication strategy appeals for assistance). Porter found repair frequencies for NNS groups similar to those in NS groups. About two-thirds of all repairs were found to be concentrated among confirmation checks, clarification requests and comprehension checks.

Further consideration of repair frequency as an indicator of interactional modification is found in Gass and Varonis (1985b). Repair occurs within "negotiation exchanges . . . in which there is some overt indication that understanding between participants has not been complete and there is a resultant attempt to clarify the nonunderstanding" (p. 39). Gass and Varonis (1985a) defined nonunderstanding routines in a similar fashion and, in discussion of their model of unaccepted input, noted that negotiation in nonnative-nonnative discourse is

triggered and then indicated by a hearer's incomplete understanding, followed by the original speaker's response and the hearer's optional reaction to the response (p. 151f). Schwartz (1980) made the identification of repair and negotiation explicit on the basis of her qualitative study, defining repair as "a process of negotiation, involving speakers conferring with each other to achieve understanding" (p. 151).

Thus it seems that repair is viewed both as the particular utterances speakers make when dealing with potential or actual trouble spots in conversations and the process by which participants attempt to reach a common understanding of problematic conversational material. The working definition of repair used in this study combines elements of both views: Conversational repair is a group of interaction strategies speakers employ to make their own and other's talk more comprehensible in anticipation of or response to communication difficulties. Although it is not always possible to know in advance of observation what participants consider to be "trouble", it is possible to examine the evidence of breakdown under various conversational circumstances by examining--as others have done--the record of repair behavior during performance of different tasks.

Task

The concept of communication task and its use as a unit of analysis in SLA research and teaching has been examined

comprehensively by Crookes (1986). Crookes defined communication task as "a piece of work or an activity, usually with a specified objective, undertaken as part of an educational course, at work, or used to elicit data for research" (p. 1), and noted that a number of other terms, including activities, jobs, procedures, processes, have also been used to denote organizational formats of use to researchers in operationalizing their research designs. From the researcher's point of view, then, tasks which appear to have unique characteristics can be employed to elicit language data for later analysis. Tasks can be varied to produce systematic variation in the language used to navigate through the task. From the instructional planner's point of view, however, tasks represent special environments in which to operationalize instructional objectives. Thus, implementation of various tasks leads eventually to various, foreseeable changes in knowledge or attitudes among learners.

Unfortunately, as Crookes noted, there is in fact very little understanding of the task-behavior relationship in second language research and practice. Applied linguists have applied the equivalent of criteria for face validity to tasks borrowed from instructional practice (but see Shortreed, 1986 for an attempt to distinguish among tasks on conceptual grounds established in the literature of group and social psychology). Thus, it is very difficult to know, except perhaps with hindsight, which task categories are

worth pursuing for data collection, or to ensure that a given task used in one piece of research is the same as that used in another (a problem noted by Varonis and Gass, 1985). Without reference to a defensible theoretical point of view, it is also difficult to know whether tasks are best distinguished by how obligatory information sharing is or by the degree of shared assumptions learners bring to the conversational setting. There are certainly other ways to distinguish among tasks used in classrooms or planned for research purposes, including, for example, the relative degree of cognitive complexity one task has over another. Even if complexity can be operationalized (see Shortreed, 1986; Crookes, 1986), researchers are still faced with justifying its importance in theoretical and practical terms.

One way of approaching the problem of selecting tasks for research or instructional purposes is to begin with a theoretical framework for selecting and then characterizing tasks. (Apart from preliminary classification within such a framework, such tasks may well have been in classroom use for a considerable period). This rather deductive strategy is not the only approach, of course, although in contrast to the inductive strategies of much recent research in the field, it can help to validate the selection of task factors within which data will be examined. This way of thinking is exemplified in two related views of communication task which have been proposed by Cummins (1983) and Mohan (1986).

Cummins was interested in the ways communication is affected by changes in "contextual support for a given . . . exchange or bit of discourse, and . . . the degree of cognitive effort required for comprehension and expression" (Cummins, 1983, p. 108). According to Cummins, language proficiency can be expected to vary along two orthogonal continuua: Range of Contextual Support and Degree of Cognitive Involvement in Communicative Activities. His framework is reproduced below.

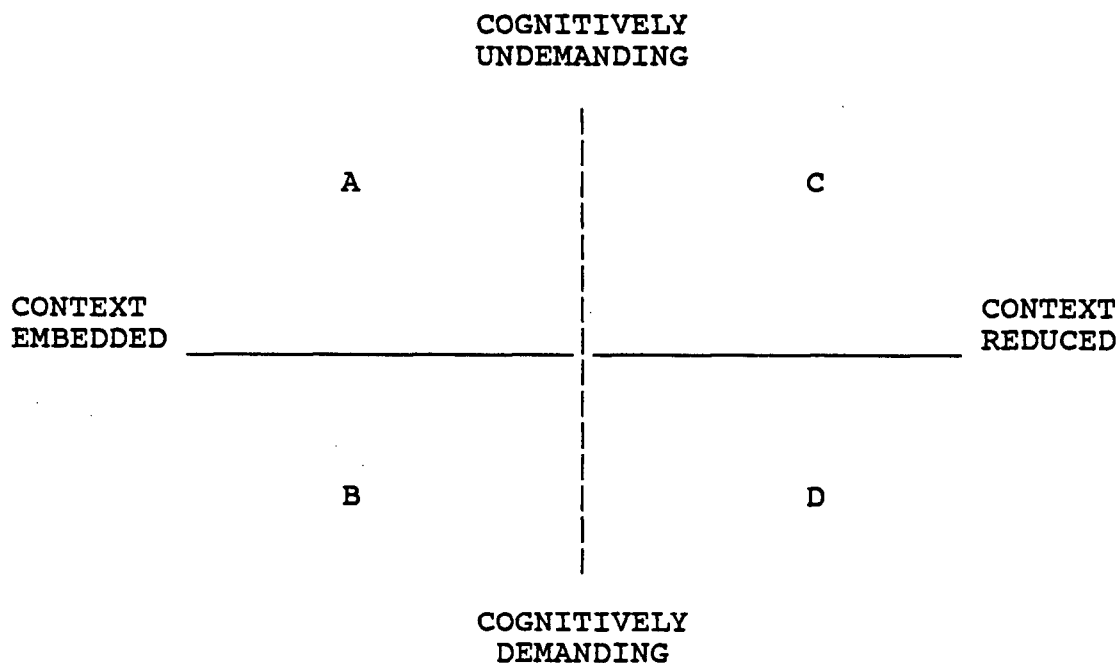


Figure 1. Range of contextual support and degree of cognitive involvement in communicative activities. (p. 120)

Cummins noted that context-embedded communication is typical of everyday (non-instructional) talk outside of classrooms in that participants negotiate meaning by

offering feedback about the intelligibility of the talk as it unfolds. Context-reduced situations are more characteristic of academic or school settings in which a premium is placed on abstract reasoning, precisely elaborated messages and careful control of learners' verbal participation in order to avoid misinterpretation.

Cognitive Involvement "can be conceptualized in terms of the amount of information that must be processed simultaneously or in close succession by the individual in order to carry out the activity" (p. 121). At the cognitively undemanding end of the continuum are mainly automatized communicative tasks which require relatively little active involvement or creative use of language. Cognitively demanding tasks, by contrast, require more active communication and negotiation of the discourse. The discourse becomes open to manipulation by the participants, thus allowing them to achieve such local conversational purposes as clarifying what a co-conversationalist says or checking to see if the listener has comprehended an utterance.

With NNS-NNS communication in mind, Cummins' framework suggests conditions under which negotiation and conversational repair are likely to be essential conditions of the discourse (quadrant B) and conditions under which they are least likely to occur (quadrant C). Quadrant B activity could reasonably occur, for example, in a company setting in which technical skills are being transferred through the medium of English as a second language: A

trainer and trainee are standing in front of a piece of chemical analysis equipment; the trainer is a relatively good speaker of English and thus has not memorized (although is familiar with) the relevant section of the instruction manual on chemical analysis of non-organic precipitates; the trainee, highly motivated to complete the activity successfully, is not sure he has understood what the trainer said about filling a graduated cylinder to a certain level, so he nominates a certain figure for the trainer to confirm. Verbal interaction of a similar, although simulated, sort could be examined under controlled circumstances, with tasks varied according to the requirements of a theoretical framework such as the one Cummins has proposed.

A terminology for task analysis in SLA research has not generally been developed on the basis of frameworks or models of the sort discussed here (but see Duff, 1986; Faerch & Kasper, 1983; Wagner, 1983 for conceptual thinking of use to design of empirical study). Mohan (1986), however, offers a broad theoretical perspective for describing activities and, specifically, uses of language in educational settings which can be applied to selection of tasks for research purposes. It should be emphasized that Mohan was interested in educational processes and did not attempt to explain processes in SLA. The typology of language and content learning is based on a knowledge framework (p. 35f.) which is divided into general theoretical knowledge and specific practical knowledge.

Knowledge is communicated through an activity which, Mohan noted, "combines theory (background knowledge) and practice (action situations) Verbal, expository learning is essential for understanding theory and symbolic knowledge, but it needs to be associated with life experience and practical knowledge" (p. 45). Thus the distinction between expository and experiential approaches to teaching and learning is, at its broadest, the difference between content expressed through theoretical discourse over knowledge which exists independently of the situation in which it is discussed (as in lectures, textbooks, classroom discussions, for example) and content expressed through practical discourse over objects which can be referred to in the communicative situation (laboratory work, demonstrations, cooperative games, for example).

The expository-experiential distinction is certainly more complex than suggested by the broad outline presented so far. For the purposes of this discussion, however, a simple, limited and incomplete characterization of task in relation to the distinction will be adopted. A communication task is expository when participants can communicate about the topic of conversation by means of discourse only. A telephone conversation would be an obvious example. (This is clearly not expository in the sense of categories of rhetoric sometimes employed to describe prose, e.g., "expository" versus "narrative" prose.) A communication task is experiential when

participants can communicate about the topic of conversation through various media (visual presentation, gesture and action, as well as verbalization) and when they can directly experience for themselves what is talked about. An example would be talk while jointly constructing a Lego toy.

Although it is convenient to speak in terms of a distinction between two task types, it is probably more realistic to view tasks along a dimension permitting participants various degrees of direct, shared experience and shared perception in the task situation. All things being equal, experiential tasks are likely to lead to more repair than expository tasks on the grounds that participants have more sources of information which may indicate conversational trouble. It should be also pointed out, however, that shared experience and perception of material resources may, at the extreme, begin to obviate participants' need to negotiate trouble, a problem posed by Gass and Varonis (1985a) and raised again below during discussion of how the Knowledge Framework may be applied to problems of observational research.

Proposing new task terminology and relating it to conceptual discussion in the literature only partially justifies its inclusion in the research. It does not follow, however, that an experiential-expository characterization of tasks is a valid one, or even that the framework which supports it is a useful means of studying the allocation of IT during tasks. How can these additional

criteria for distinguishing between experiential and expository tasks be invested in the research? What additional body of research can be employed to test the reality of experiential and expository behavior during performance of given tasks?

Reference

One way of approaching these questions is to examine how elements of spoken texts gain cohesion during discourse and force what Brown and Yule (1983a, p. 190) refer to as co-interpretation. Halliday and Hasan (1976) have discussed cohesion in texts as "a semantic relation between an element in the text and some other element that is crucial to the interpretation of it" (p. 8). They note, "Where the interpretation of any item in the discourse requires making reference to some other item in the discourse, there is cohesion" (p. 11). Reference is a form of cohesion which links the identity of a thing (its referential meaning) with other elements in a text variously crafted to represent it.

Halliday and Hasan's taxonomy distinguishes between exophoric (situational) and endophoric (textual) forms of reference. Exophoric reference is an especially interesting part of the taxonomy because its use is entirely restricted to the situation in which it occurs; its use is thus entirely external to effort speakers expend on creating a cohesive text. During exophoric reference speakers typically refer to objects which can be viewed or otherwise located through the use of language. In the absence of a visual

record or a supplemental text, therefore, non-participants are forced to imagine what the initial referent might have been. The authors noted that "language-in-action" situations entail a high proportion of exophoric reference, situations in which at least one of the participants makes reference to things in the immediate environment and assumes that the co-participant is able to follow the verbal (and often physical) "pointing out". When an addressee is unable to do so, as may be the case when adults are dealing with very young children who assume that everyone to whom they speak shares their own focus of attention, referential presuppositions must be resolved, negotiated in effect, before the adult will allow the conversation to move on. The following exchange (excerpted from Halliday & Hasan, 1976, p. 34) illustrates this point:

Child: Why does THAT one come out?

Parent: That what?

Child: THAT one.

Parent: That what?

Child: That ONE!

Parent: That one what?

Child: That level there that you push to let
the water out.

This rather narrow focus of negotiation would not typically happen in adult conversation, especially in cases of peer group members who share considerable knowledge and maintain certain expectations about the things likely to be

pointed out during conversation. In fact it is precisely the "reservoir of shared experience" (p. 36) which makes exophoric reference a natural, expected feature of the discourse but an enigma to those who do not share the same level of experience and the same material context.

One function of endophoric reference in discourse, then, is to supply cohesion to the spoken text which exophoric reference is unable to do. Anaphora, the "pointing back" form of endophoric reference, for example, lends cohesion to texts by referring to things (objects, ideas, states) which are removed in space (in the case of written texts) and time from the initial presupposition. This characteristic of anaphora makes talk more portable, in a sense, allowing conversational participants to share meaning (assuming they share a similar referential competence) without dependence on the situation. Halliday and Hasan point out that speakers-to-be (next speakers in a conversation) ordinarily have the competence to judge whether reference is exophoric or anaphoric, i.e., whether or not it serves a cohesive function in a text, and to identify which part of the text is the referent. Although this sort of competence may be generally available to speakers-hearers in any language group, it is demonstrably a learned competence which permits people in particular language groups to recognize what kind of reference is at work in a conversation--whether reference functions to point out or to point back--and to respond to it appropriately.

What happens to this language-specific structure of reference when NNSs engage in conversation and how does it relate to the tasks they are asked to perform in instructional settings? Given Mohan's distinction between practical and theoretical knowledge and Halliday and Hasan's description of how situational and textual reference function, it becomes possible to propose a set of terms which move from conceptual framework to behavioral exponents which are of use in the research design (Figure 2). The list of terms is neither exhaustive nor indicative of subtle differences among specific types of tasks which could be selected for research (or, for that matter, instructional) purposes. It does, however, put recent thinking on task into perspective. It also provides a foundation for making suggestions about the relationship of such verbal behavior as reference and repair in discourse contexts to approaches to teaching and learning.

Figure 2 is offered simply as a guide for exploring possible connections among its parts. It aims to suggest tendencies but it is not intended to claim absolute, clearcut relationships. The figure thus suggests that there is a tendency for experiential approaches to be associated with exophoric reference more than with anaphoric reference. There is no suggestion, however, that experiential approaches are limited or restricted to exophoric reference, or that anaphoric reference cannot appear in experiential texts. The same may be said for the other links in Figure

2; they are all tendencies, some of which may be treated empirically.

Many of the terms in Figure 2 will be re-introduced in Chapter 3 with the research design. For the present, it should be noted that the figure distinguishes horizontally between theoretical and practical knowledge, and vertically between concept and situation. Task is thus roughly at the intersection between what the researcher (or teacher) intends and what actually occurs in the discourse setting. Movement down the figure brings increasing specificity, so that at the point where the reference types and repair

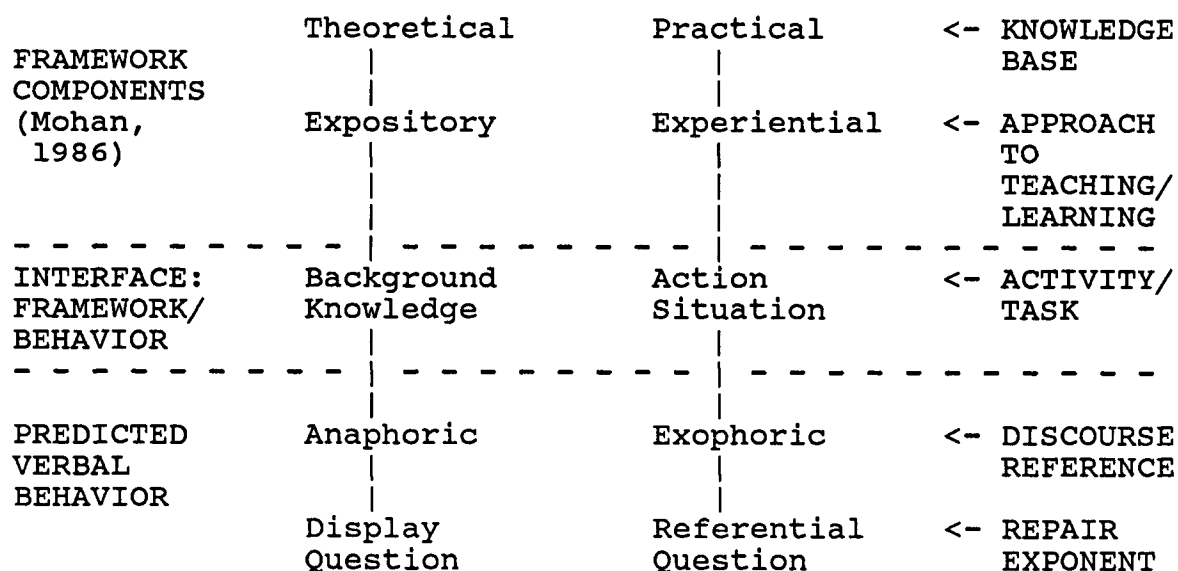


Figure 2. Extending the Knowledge Framework to problems in observational research.

exponents are listed, it is possible to think in terms of how parts of the framework might be extended into operationalizing task-based research. It is possible to propose, for instance, that exophoric reference would be

more frequent than anaphoric reference when an experiential approach to organizing a task is employed, or that more display questions will be produced under expository (rather than experiential) conditions.

At the same time, Figure 2 does not attempt to relate specific task attributes discussed in the literature to learners' verbal behavior. Thus, although two-way tasks, as Long (1980) and others have found, are focal points for negotiation of language, Figure 2 proposes, instead, that experiential and expository activity be viewed as more fundamental bases for learners' verbal behavior. The figure is not especially sensitive, moreover, to the possibility that some tasks will be mixed affairs and that experiential and expository attributes may be blended in the same task. This possibility suggests the dimensionality of approaches to teaching and learning, and the importance of eventually reflecting dimensionality in a research design which claims some reasonable link to the world of educational practice.

Finally, the figure does not indicate that some task attributes may have a complex, curvilinear relationship with points along the experiential-expository dimension. A very high level of shared situational knowledge, for instance, would reduce the negotiation over meaning participants would otherwise have to accomplish during use of an experiential approach. Largely shared perception of the situation would occur when participants have a common physical, visual access to the objects they are talking about. Highly

experiential (literally "hands-on") activity, then, would predictably entail shared visual perception and permit expository reference to be the norm (Halliday & Hasan, 1976 made precisely this point; see also Gaies, 1982). A high level of negotiation would thus occur somewhere between completely shared and completely atomized knowledge of the situation: When the identification of topics becomes a problem for participants to work out, when gaps in situational or background knowledge must be compensated for, talk will very likely have to be repaired.

The general argument developed to this point, then, is that certain kinds of knowledge (theoretical and practical) are likely to be communicated by certain approaches to teaching and learning (experiential and expository) which are given form in particular tasks. Tasks are the settings in which behavior is enacted and in which various forms of reference (anaphora and exophora, for example) and repair occur.

This formulation of the argument, or at least parts of the argument, can be tested by empirical means. Thus, for example, an important focus of the foregoing discussion has been on reference, on the descriptive system of reference which has served as a basis for nearly all later consideration of the subject (Brown & Yule, 1983a; Martin, 1983) and on the possible relationship among conversational reference, repair and task. In the case of reference, it is the more established framework (reference, in particular

exophoric and anaphoric forms of reference) which can be used to validate the more novel way of thinking about tasks--that tasks reflect the varying degrees to which teachers apply experiential and expository approaches to their communication with learners. Elaboration of how this was done and the results obtained from the validation procedure will be presented in the following two chapters.

Summary

A review of literature in several related fields has highlighted the importance of interactional modification for second and foreign language learning. Early FT literature suggested a central role for simplification by NSs in NS-NNS communication in order to achieve a basic level of communication. FT which occurs in conversational settings was also shown to serve key social functions, in particular the exchange of information between conversational peers. FT in instructional settings, otherwise known as teacher talk, has been characterized as a distorted and relatively inefficient medium for assisting learners to acquire a second language, although several studies have suggested appropriate adjustment of teacher talk to foreign learners during lecture and narration of instructional material. FT produced in non-instructional settings, however, seems more sensitive to the situation and the learner, with NS contributions (input) adjusted according to the learner's proficiency, pronunciation and demonstrated comprehension.

Much recent work comparing FT and IT has focused on the

interactional qualities of the language produced in various kinds of discourse settings and the potential contribution such interaction makes to SLA. Several studies have shown IT to be at least as useful as FT in generating negotiation over troublesome or misunderstood conversational material. When compared with traditional, teacher-fronted classroom instruction, information exchange in small-groups of NNSs has proved to be a superior means of developing negotiated exchanges which require the participants, in general, to clarify information and check comprehension.

Among the key variables in studies of NS-NNS and NNS-NNS interaction are repair, task and reference. The nature of conversational repair was examined and found to be a frequent focus of attention in studies examining how members of NS-NS, NS-NNS and NNS-NNS groups refine and clarify conversational trouble. Repair is clearly an essential feature of small group communication in that it allows members to widen the scope of material which can be discussed. Although the repair process requires sometimes complex negotiation over incomplete understanding, repair is also signalled by a limited number of recurring and commonly used exponents which have been reported in the literature.

Task has been viewed as both an instructional resource and as a means of studying the characteristics of learner language (interlanguage). Tasks have been varied to study effects on learner language and on the language used to negotiate talk between learners. Theoretical viewpoints on

the nature of educational discourse have generally not informed the selection of tasks for research purposes, nor has task-based language been the subject of comparative, small-group study which distinguishes between native and non-native teacher-led groups on performance of tasks. Based on conceptual reasoning, it has been argued here that tasks seem most fundamentally to vary on a dimension of experiential and expository activity and that the distinction can be tested empirically through application of a now widely held understanding of reference within the discourse situation.

The issue of how task influences various forms of repair and reference in small, teacher-led groups is the subject of the entire discussion which follows.

CHAPTER 3:

RESEARCH DESIGN AND METHODOLOGY

This chapter contains a description of the research design and the methodology used to implement it. Major topics taken up in the section on research design include a brief rationale, a tabular summary and related discussion of the design, a description of the major variables used during operation of the design, a list of hypotheses and a discussion of the general strategy used to test the hypotheses. The section on methodology focuses on selection and treatment of subjects, collection and coding of data and various approaches to analysis of the data.

The Research Design

Assumptions and Rationale

Two assumptions regarding the nature of repair between NNS conversation partners have guided construction of the overall design.

First, a distinction is drawn between repair undertaken by teacher-learner groups (which may include either a NS or a NNS teacher) and by learner-learner groups. Several studies have made it clear that the proper baseline for making sense of interlanguage talk is talk between native and non-native speakers. One of the strengths of Porter's (1983) study, for example, was that each NNS-NNS dyad had NS-NNS and NS-NS counterparts to allow for multiple levels

of comparison on the dependent variables. Long (1981) explicitly noted the importance of comparing mixed (NS-NNS) dyads with NS-NS dyads in order to make useful comparisons between a relatively unstudied phenomenon (NS-NNS interaction) and a relatively well-studied phenomenon (NS-NS interaction). A question arises, however, when the object of research interest is the language of repair in teacher-led groups: What sort of comparison ought to be represented in the research design? Because there is no "well-studied" group to serve as a natural baseline in this study, criteria for selection of levels in a group factor should, as an alternative, reflect something of the natural world in which English-as-a-foreign language (EFL) teachers operate. Given the typical overseas EFL situation, this would mean that research groups would, at a minimum, include learners of English who speak a common local language, and a combination of native and non-native (i.e., local) teachers of spoken English who are proficient in the language they teach.

An important implication of comparing two kinds of teacher-led groups in an EFL setting, then, is that baseline comparative data for repair of NNS-NNS (teacher-learner) talk is repair of NS-NNS (teacher-learner) talk and that comparisons between NS-NNS and NNS-NNS teacher-led groups must be set up at the stage of research design.

The second assumption is that the tasks selected for the research design are qualitatively different from each other and can be expected to produce qualitatively different

repair profiles. This assumption is based in a very general sense on the well-argued sociolinguistic perception that the forms and organization of conversation are dependent on characteristics of the speech situation (Cazden, 1972; Hymes, 1972; Turner, 1976, for example). But the more specific point made here is that the frequency with which participants repair their own and others' talk is sensitive to the kind of conversational environment they are operating in. Although tasks can be categorized in many ways, one system developed for categorizing tasks in educational settings, Mohan's (1986) Knowledge Framework was found to be of potential value in distinguishing the kinds of language generated by experiential and expository approaches to teaching and learning. Experiential and expository approaches to tasks in the research situation, namely tasks intended to elicit research data, will extend uses of the framework beyond instructional planning and into the area of research design. Based on the framework, it is assumed that experiential approaches to tasks in the research situation will ordinarily require more repair than expository ones, although certain kinds of experiential approaches, those in which situational information must be negotiated, will entail more repair than others.

The implication of this position for the research design is that a conceptual basis exists for distinguishing between tasks and can assist predictions about the relative frequency of repair. Furthermore, the validity of

distinguishing between tasks on the basis of their experiential and expository characteristics can be tested by examining the frequency of reference within the various kinds of tasks selected for the study. In general, exophora should be found more frequently in tasks emphasizing experience; anaphora should be found more frequently in tasks emphasizing exposition.

An Overview of the Design

Group and Task Categories

Figure 3 outlines the combined between-and-within subjects, repeated-measures factorial design used in the study. Although the design is primarily intended to support a series of 2 x 5 repeated-measures analyses of variance (ANOVA), it is also the basis of a qualitative analysis of transcripts coded for repair and reference.

Group, the between-subjects factor, has two levels, Mixed (NS-NNS) and Homogeneous (NNS-NNS), with six equivalent values within each level (i.e., six mixed and six homogeneous dyads). The dyads ($N=12$) are the basic between-subjects source of comparison; each contains one teacher and one learner.

Communication Task, the within-subjects factor and repeated measure, has five basic levels (computer instruction, COM1; computer demonstration, COM2; topical discussion, DIS; Lego constructed back-to-back, LEG1; Lego conducted face-to-face, LEG2).

Factor 2: Communication Task					
		Teaching tasks (educational goals)		Non-teaching tasks (social goals)	
		Subject instruction		Social exchange	Problem-solving
Factor 1: Group	COM1	COM2	DIS	LEG1	LEG2
<u>Mixed</u>					
1 NS-NNS					
2 NS-NNS					
3 NS-NNS					
4 NS-NNS					
5 NS-NNS					
6 NS-NNS					
<u>Homogeneous</u>					
1 NNS-NNS					
2 NNS-NNS					
3 NNS-NNS					
4 NNS-NNS					
5 NNS-NNS					
6 NNS-NNS					

Figure 3. Factorial design with major conceptual distinctions used in the study.

The task factor contains conceptual distinctions of use during the ANOVA and the qualitative analysis which follows the ANOVA. The first distinction is between teaching and non-teaching tasks. Teaching tasks emphasize achievement of objectives intended to increase the learner's knowledge or competence through explicit instruction of subject matter

which an educational authority considers worth learning (i.e., broadly, educational goals). Both of the teaching tasks selected for the study, COM1 and COM2 are oriented around subject-matter rather than target language instruction. The Non-teaching tasks employed here include free discussion, DIS, which emphasizes social exchange and two, LEG1 and LEG2, which center on problem-solving. Although both sets of non-teaching tasks depend on participants' cooperative, consensual behavior to achieve their goals (they are intended to achieve interpersonal or social goals), DIS emphasizes expressive discussion allowing free development of propositional content and presumes that participants have more-or-less equal rights to volunteer contributions ("autonomous contributions", see Ellis, 1984, p. 130); the point of the discussion is typically development or exploration of social relationships. The Lego tasks, on the other hand, center on exchange of information which is normally intended to assist in the solution of a problem; it is the problem which motivates cooperative use of the target language.

These distinctions among tasks reflect the categories Ellis (1984, 1985) has developed to describe the prospective goals of interaction in second language classrooms, specifically message-oriented, social, and activity-oriented goals (cf. tasks based, respectively, on subject-matter instruction, social expression, and problem-solving). Malamah-Thomas (1987) draws a related, although briefer,

distinction between classroom language used to achieve either educational or social purposes.

Four of the tasks are also classified according to the extent to which they emphasize the role of experience over exposition during performance of the task. "Experience" has been simplified in practice to refer to whether or not dyad members can point out or manipulate and see things in the task environment (i.e., + or - "doing" and + or - "seeing")--a level of simplification a teacher might employ, for example, when planning classroom activities. Thus, tasks range from the most intense level of experiential activity to the most intense level of expository activity (LEG2 and COM2 [+ doing, + seeing] -> LEG1 [+ doing, - seeing] -> COM1 [- doing, - seeing]), a series of distinctions which were applied to part of the hypothesis-testing procedure (Research Questions and Hypotheses, below). DIS lies outside this classification, since it has the potential to take on or drop experiential characteristics depending on the intentions of the participants and the development of the discussion. Because DIS is, at the outset, an undirected, non-teaching task which contains the potential to become whatever its participants want to make of it, it can serve as a useful reference against which the other tasks may be compared.

Grouping of tasks into these categories allows for pursuing directional hypotheses from a conceptual base. The classifications outlined here (and reflected in Figure

3) overlap at a number of points, most notably in the combination of teaching tasks with expository approaches to instruction and of non-teaching (cooperative problem-solving) tasks with experiential approaches toward solution of the problems. Although these do not exhaust the possibilities, they have been mentioned to suggest links between the research design and the kinds of discourse contexts which might be encountered in both classroom and non-classroom settings. A more detailed description of the tasks is found in Methodology, below.

Treatment

Each dyad experienced a sequence of all tasks at one sitting, hence the repeated-measures designation of the task factor (see Ferguson, 1981: "repeated measurement of the same subjects under a number of different conditions or treatments", p. 317). The sequence of tasks was randomized, however, following a standard Latin Square assignment of tasks to the dyad.

Descriptive Measures and Dependent Variables

Used in the Study

Descriptive Measures

In order to achieve a general descriptive picture of the data, nine non-inferential measures of conversational activity grouped into three categories were applied to the transcript data prior to the analysis of variance: 1) word-based measures (total words, the number of words uttered per minute, the number of unique words uttered, and type-token

ratio--unique words:total words, i.e., an indication of increasing lexical sophistication as the coefficient derived from the ratio increases), 2) utterance-based measures (total utterances, and words per utterance), and 3) turn-based measures (total turns, words per turn and utterances per turn).

Although hypothesis testing could be based on these descriptive features of the discourse, very little previous work has found them significant predictors of repair behavior. On the other hand, they comprise a useful group of terms for characterizing the quality of talk in NS-NNS and NNS-NNS conversations (see, for example, Porter, 1983; Long, 1985 for illustrations of word-based measures, Arthur et al., 1980; Porter, 1983; Long, 1980 for application of turn-based measures, including type-token ratio). In the present study, the descriptive categories make explicit reference to the factorial structure of the research design but, at the same time, do not require raters to infer the occurrence of a particular kind of repair behavior (i.e., they are "low-inference" measures).

Dependent Variables

In addition to the descriptive measures listed above, the design used two categories of dependent variables, which are briefly defined and described here (see Appendix E, Instructions to Raters and Index of Dependent Variables, for additional description and exemplification). The first category of dependent variable is really a group of 12

related discourse strategies participants employ to maintain the comprehensibility of the ongoing talk. These Repair Exponents (REs) were selected largely on the basis of their appearance in previously reported research and their utility in focusing on the qualities of teacher-learner interaction. The list of REs is neither exhaustive nor is it intended to break new ground in the description of repair behaviors. On the contrary, the list is intended to apply categories which have been already identified in the literature, or which are conservative extensions of existing categories, to examination of novel research questions. From an interactional perspective, moreover, the REs, considered individually, are particular points in the discourse and thus cannot suggest the complex, negotiated character of the talk. In order to do this, a qualitative examination of repair in context will be presented in Chapter 6. For the present, however, emphasis is on the comparative frequency of repair and reference within the cells of the design. The following REs served as dependent variables in the study; the associated description also served as working guidelines for coding of transcripts.

1. Clarification Request (CCLAR). (See Brulhart, 1985; Doughty & Pica, 1986; Duff, 1986; Long, 1980, 1981; Long and Sato, 1983; Pica, 1987; Pica & Doughty, 1985; Pica et al., 1987; Porter 1983, 1986.) A request for clarification is focused on the preceding speaker's utterance and requests new or reformulated information from the previous speaker.

Although a question ordinarily conveys the clarification request (nominally, Would you say that in other words?) it is possible for the request to come in the form of an interpretable statement such as I don't quite understand.

2. Comprehension Check (CCOM). (See Brulhart, 1985; Doughty & Pica, 1986; Duff, 1986; Long, 1980, 1981; Long & Sato, 1983; Pica, 1983, 1986, 1987; Pica & Doughty, 1985; Pica et al., 1987.) Speakers are normally interested in knowing if listeners have understood them. A comprehension check satisfies this interest by allowing a speaker to query the listener's understanding of a current utterance. The nominal form of a confirmation check is Have you understood . . . ?, although, in practice, such indirect forms of confirmation check as OK? may serve just as well. Rising intonation typically signals a comprehension check and thus makes it possible to distinguish such topical boundary markers as right or OK (used with falling intonation) from an attempt to check comprehension.

3. Confirmation Check (CCON). (See Brulhart, 1985; Doughty & Pica, 1986; Duff, 1986; Long, 1980, 1981; Long & Sato, 1983; Pica, 1983, 1986; Pica, 1987; Pica & Doughty, 1985; Pica et al., 1987.) A confirmation check is made by a listener to check understanding or hearing of the speaker and can be reduced to the nominal form Have I understood? As in the case of a comprehension check, a confirmation check is made with rising intonation, but also entails partial or complete repetition of a preceding utterance

(specifically, the immediately preceding utterance) as in the case of other-repetition.

4. Definition (DDEF). (See Gaies, 1983; Schwartz, 1980; Snow, 1987; also Porter, 1983, 1986 re: requests for definition.) Like prompts, definitions typically serve to fill a gap left by one of the participants or may be produced even before any specific request has been received from an interlocutor, depending on the speaker's perception of the listener's level of comprehension. A definition is ordinarily accomplished by a speaker producing a statement on the meaning of an identified object which is unfamiliar to the listener but included within a class of objects which is presumably familiar to the listener (e.g., A wrench is a kind of tool). In conversational situations where proficiency levels differ between participants, a definition would generally be produced by a more proficient speaker in aid of a less proficient speaker's understanding. Definition thus serves as a marker of how the more proficient speaker perceives the lexical competence of the less proficient speaker.

5. Display Question (DDQ). (See Brulhart, 1985; Duff, 1986; Long & Sato, 1983.) Sometimes known as rhetorical, test, evaluative or known-information questions, display questions request demonstration of knowledge or information already possessed by the speaker--and known by the listener to be possessed by the speaker. In teaching situations, display questions are frequently intended to serve an

instructional purpose, and thus the particular content covered by the question would form part of the instructional syllabus. Display questions may occur in settings other than those which are explicitly instructional. One implicit assumption behind a display question, regardless of the setting in which it is asked, is that a conversational partner probably does not know, but ought to know, the specific content on which the question is based.

Alternatively, an additional assumption behind a display question is that even though a listener may know the content focus of a display question, it is necessary to test the knowledge. A question of the sort What do I have in my hand? (listeners are able to see what is in the hand) is an illustration of the point.

6. Echo (EECH). (See Gass & Varonis, 1986.) One other form of other-repetition, echo, is signalled by flat or falling intonation and thus does not seem to serve as an indication of incomplete understanding, but rather functions to pick out or reinforce the introduction of new information by one of the participants. It thus has the potential to encourage additional talk. An echo is, by definition, an exact (partial or complete) repetition, of an immediately preceding utterance.

7. Lexical Uncertainty (LLEX). (See Porter, 1983, 1986; Schwartz, 1980; Tarone, 1983.) Indications of lexical uncertainty represent possible triggers for such conversational behavior as definitions, comprehension checks

or prompting and may take such forms as a search for a specific word or pausing to indicate to an interlocutor that lexical material is not immediately at hand. Indications of lexical uncertainty open up opportunities for other-repair which may or may not be taken up by a partner in a given context.

8. Referential Question (RRQ). (See Brulhart, 1985; Duff, 1986; Long & Sato, 1983.) A referential question is designed to elicit information which is unknown to the speaker but which may be possessed by the hearer. An interlocutor's potential response to the referential question, moreover, must be of interest to the source of the question. Referential content is typically generated by the topic being considered; that is, it is not part of the participant's negotiation of meaning (which takes place outside of and temporarily removed from the topical content). Given this formulation, a request for clarification would be external to the topic and thus distinguishable from a referential question.

9. Self-expansion (SSEXP). (See Ellis, 1984, 1985.) A self-expansion is a partial or complete rephrasing of one's own utterance and is thus distinguished from elaboration of another speaker's utterance (see other-expansion, below), a form of other-repair. It can be viewed as a form of self-repair which typically occurs within the current speaker's turn but may occur within the speaker's next available turn (see, also, self-repetition and other-

epetition, below). Self-expansion extends the interpretability and refines the meaning of the speaker's initial utterance.

10. Self-repetition (SSREP). (See Brulhart, 1985; Long, 1980; Long, 1983b; Pica & Doughty, 1985; also Doughty & Pica, 1986 re: the role of repetition in NS-NNS and NNS-NNS interaction.) Exact, partial or semantic (equivalent) self-repetition (not including a grammatical functor) within five turns of an initial utterance indicate that the speaker wishes to emphasize or recycle conversational material of use in a current context. This form of repetition is distinguished from a false start or stutter within an utterance in order to emphasize its potential function in maintaining conversational cohesiveness at a level a speaker perceives necessary for a listener.

11. Other-expansion (OOEXP). (See Campbell et al., 1977 (cited in Freed, 1978; Long, 1980), Ferguson, 1975; Long, 1980). The term expansion normally refers to expansion of an interlocutor's utterances and has also been applied specifically to repetition and/or rephrasing of part or all or part of a previous utterance in order to supply obligatory grammatical functors (Long, 1980, p. 84). Use of the term here is applied to rephrasing and/or extension, but not exact repetition alone, of either grammatical or propositional content in the previous speaker's utterance.

12. Other-repetition (OOREP) (See Brulhart, 1985; Doughty & Pica, 1986; Long, 1980, 1981, 1983b; Pica &

Doughty, 1985; Pica & Long, 1986; Porter, 1986.) Exact, partial or semantic repetition of another participant's utterance within five turns nominally indicates incomplete understanding and a desire to begin recycling the problematic conversational material. This form of other-repetition is ordinarily accompanied by rising intonation.

The second category of dependent variable has been discussed under the notion of conversational reference (Halliday & Hasan, 1976; Brown & Yule, 1983a) and includes the following two exponents.

1. Exophoric Reference (EEXO). Exophoric ("pointing out" or "situational") reference, takes a number of forms during conversation depending on the background and situational perception which participants share. Among the most common exponents of this form of reference, however, are context-bound, demonstrative pronouns which point to particular objects in the perceptual range of the speaker and hearer: it, this, that, these, those (push this [e.g., function key]), in addition to the definite article used to refer to a "particular individual or subclass . . . identifiable in the specific situation pass me the towel; . . . the snow's too deep" (Halliday & Hasan, 1976, p. 71). As Halliday and Hasan have pointed out, however, it is not necessary that the thing being referred to be "physically present in the interactant's field of perception" (p. 49). The only fundamental requirement is that participants are able to share identification of the

thing being referred to. Numerous other classes of exponents could also be included (such possessive determiners as mine, yours, ours, his, hers, theirs, and its, in addition to such possessive modifiers as my, your, our, his, hers, etc.), although for present purposes it is sufficient to emphasize that since exophoric reference lends no cohesion to spoken discourse it is marked by its relative isolation in the here-and-now of the situation.

2. Anaphoric Reference (AANA). Anaphoric ("pointing back" or "textual") reference, is entirely cohesive in function; ordinarily it cannot be interpreted without reference to something at a previous point in the spoken or written text. For example, the they in Computers can be used for wordprocessing, although they are better suited to numbercrunching refers, of course, to "computers" in the immediately preceding independent clause and would be counted as an instance of anaphoric reference. The they in They go on the right side, by contrast, would constitute a case of exophoric reference if the group of objects to which the participants refer can only be identified by visual inspection or some other form of shared perception, and if there is no prior reference in the spoken text.

Research Questions and Hypotheses

This section introduces a series of research questions and hypotheses which reflect the foregoing discussion and which are linked to a strategy for analysis of the data (see Table 1). Each research question (Qn) is intended to focus

attention on an issue of practical or theoretical interest and to support examination of ensuing questions and hypotheses. Each hypothesis (H_n) is stated in directional or non-directional form depending on the research purpose and numbered following the steps of the analysis strategy. A brief description of the statistics employed to test the hypotheses and the forms of tabular analysis follows the listing of hypotheses.

The first two questions are procedural (PQn) and will not be considered part of the hypothesis testing related to repair and reference. They will, however, form the initial part of the analysis strategy, since the answers they generate will help to determine how dependent variables in the research design will be treated (whether or not they will have to be transformed, for example) prior to hypotheses testing.

PQ1: How homogeneous are the teacher-led groups?

PQ2: What is the distribution of frequencies for repair and reference between and within groups?

Q1: Do group type and task influence the use of repair?

H1: The frequency of repair in dyads does not vary significantly by group membership or type of task performed.

Q2: Do group type and task influence the use of reference?

H2: The frequency of reference in dyads does not vary significantly by either group membership or task performed.

Q3: Is experiential activity a better source of repair behavior than expository activity?

H3: Repair occurs significantly more frequently during tasks which emphasize experiential activity than during tasks which emphasize expository activity.

Q4: How are anaphoric and exophoric reference related to expository and experiential task activity?

H4a: Anaphoric reference occurs significantly more frequently during tasks which emphasize expository activity than during tasks which emphasize experiential activity.

H4b: Exophoric reference occurs significantly more frequently during tasks which emphasize experiential activity than during tasks which emphasize expository activity

Q5: What are the textual profiles of the most frequently occurring forms of repair, particularly those which characteristically appear in combination with each other?

— No hypotheses were tested for this question, although generalizations about the qualities of repair in context will be developed following report of the results obtained through the analysis of variance.

A summary of conditions under which these hypotheses were tested, including test statistics, directionality, and the number and location of tables or tabular summaries, is

listed in Table 1.

Table 1

Summary of Conditions for Testing Hypotheses Relating to
Group, Task, Reference and Repair

Question/ hypothesis number	Statistical tests	Critical values		Number of tables*
		direction	p	
PQ1	Friedman 2- way ANOVA/ Chi-square	2-tailed	< .025	1 Sum.
PQ2	Sq. root/log. trans./Comp. alpha levels	--	--	1 Sum. (App. G)
H1	ANOVA/ <u>F</u>	2-tailed	< .025	12, 2 x 5 1 Sum.
H2	"	"	"	2, 2 x 5 1 Sum.
H3	"	1-tailed	< .05	1 (Sum.) 6, 2 x 2 (App. I) 6, 2 x 2 (App. J)
H4a	"	"	"	1, 2 x 2
H4b	"	"	"	1, 2 x 2

* The number of tables indicated does not include post-hoc analyses.

Since repair has 12 exponents and reference has 2 exponents in this study, the number of analyses is considerably larger than the number of hypotheses. In all, 33 ANOVA tables were produced (including the main and summary tables found in the

text or appendices), in addition to a number of post-hoc comparisons made whenever major sources of variance needed to be located. In general, the research design was conceived to move strategically through the process of analysis, requiring that certain hypothesis-testing or validation procedures be completed before beginning others. This issue is more fully developed in the following section.

General Strategy for Data Analysis

The first phase of the strategy (PQ1-PQ2) was directed towards the internal validity of the design and a decision over whether or not to transform dependent variables which showed a skewed distribution. Two preliminary treatments of the data were performed. The first treatment concerned the degree of homogeneity found within each of the groups ($n = 6$) formed for the study. Basically, the problem was to determine the sources of any differences within groups with respect to use of repair and reference during the five tasks. Although the composition of dyads within the groups was controlled for proficiency in English and status (teachers and students in each dyad) it was assumed that individual differences would probably emerge on some of the variables during performance of some of the tasks. Given this point of view, it became necessary to determine the sources and account for any pattern of differences within the groups prior to conducting and attempting to interpret analyses of variance. In order to do this, a Friedman Two-way Analysis of Variance by Ranks (Siegel, 1956) was

conducted for each group (see Table 2 for a summary of the statistical analysis).

The second preliminary treatment of the data determined the need for transformation of the frequencies recorded for each dependent variable used in the study. Tabachnick and Fidell (1983) note that the "F test is robust to violations of normality and homogeneity of variance, as long as sample sizes are relatively equal, but not to skewness" (p. 77). Although excessively skewed distributions are candidates for transformation, the authors also note that in practice the advantages of attempting to normalize distributions may be small, particularly when the transformed variables are rendered more difficult to interpret. The approach used here was to select randomly seven of the 14 dependent variables, apply both square root and logarithmic transformations to each of these, and then compare the effects for group and task in repeated-measures ANOVAs performed on the variables in both transformed and untransformed states. The selection included variables with severe positive skewness, moderate skewness and near-normal skewness. As in the case of the discussion of within-group homogeneity, a brief summary of the results of these tests (Table 3) is presented below in Preliminary Treatment of the Data.

The second level of strategy (H1-H2) entailed a conservative approach to testing group and task differences in the use of repair and reference. The two null hypotheses

at this level propose no differences between group and tasks and require a level of significance which is twice as stringent as that normally required for directional hypotheses ($p < .025$). This is due to the use of a relatively novel conceptual approach to tasks and groups in the design, and thus to the exploratory nature of the research questions and associated hypotheses. At the same time it should be stressed that this level of analysis is the key to further treatment and interpretation of the data. Results obtained from this phase of the study would be used to construct the specific components of an approach to hypothesis testing in the following phase.

Accordingly, once these initial hypotheses were tested, it was then possible to pursue the results more aggressively--to argue, in effect, that the additional hypotheses were founded in the previously tested ones--and test (with directional hypotheses and less stringent probability levels) additional hypotheses about the relationship of group and task to repair and reference. This third phase of the strategy (H3-H4b) is based on combining and selecting tasks on both conceptual and empirical (i.e., prior hypothesis-testing) grounds. In particular, it was designed to direct analysis of repair and reference to tasks which appear as concentrated sources of experiential or expository behavior.

The fourth phase of the study extended the results of the previous phase into a qualitative examination of

patterns of repair in transcriptions excerpted from two overlapping areas of the research design: teaching tasks which employ extensive expository behavior and non-teaching tasks characterized by participants' experiential behavior. The procedures involved at this level of qualitative analysis included describing and contrasting formal and functional qualities of the selected sets of variables. The essential point of this phase of the study was to capture patterns and regularities within the data which were not pursued or adequately described through analysis of variance.

Methodology

Selection and Treatment of Subjects

Subjects for the study were selected from the membership of two public university English Speaking Society (ESS) clubs (total membership = 45) located in the Osaka-Kobe area of western Japan, and from a list of 14 university English teachers (seven Japanese and seven native speakers of English) known to the researcher. The object of selecting from among this group of 59 prospective subjects was to form an equal number of teacher-led NS-NNS and NNS-NNS dyads. All prospective subjects received a general explanation of the research and invitation to participate under specific conditions (Appendix B).

The conditions differed somewhat depending on whether the prospective subjects were ESS members or teachers. ESS members were asked to take a standardized English language

proficiency test, the CELT (Comprehensive English Language Test) - Structure (see Appendix D). Members scoring in an intermediate range (65 to 80 percent, see norms published in Harris & Palmer, 1986a) would be asked to take a standardized, oral proficiency examination in English, the LPI--Language Proficiency Interview (see Appendix D; Educational Testing Service, 1982), to confirm the initial finding of intermediate proficiency based on the CELT and to establish a level for conversational ability--that is, for a level of competence which would be exercised during performance of the communication tasks. Members scoring between 1+ and 2 on the LPI following a 15-minute telephone conversation (roughly an intermediate range on the scale between 0, no ability to communicate in the language and 5, equivalent to an educated native speaker) would be invited to participate in a series of dyadic conversations with either a Japanese or a native speaker of English. The Japanese teachers were also asked to take the LPI and invited to participate only if their score was 3 or greater (professional competence in the language). No such tests were administered to the NSs of English.

The main purpose of selecting subjects by English proficiency was to ensure that all dyads would consist of participants at comparable levels, that is, a learner at an intermediate level of proficiency and a teacher of native or near-native proficiency.

Assignment to Dyads

Once a pool of prospective participants had been obtained, the process of assignment to either the Japanese-led or native-led dyads was initiated. The names of all ESS members whose proficiency was tested at an intermediate level were shuffled and randomly assigned to either a NS or a NNS teacher. This process continued until each of the 14 teachers was matched with an ESS member. Next, individuals in each matched group were contacted in order to arrange for a recording date. Whenever ESS members indicated that their schedule would not in fact permit matching and recording with a teacher at any of the dates, times and places suggested by the researcher, the member was dropped from further participation and the next member on the list was contacted and asked to participate.

Because of scheduling difficulties, two matched and scheduled groups could not be accommodated and were dropped from the study. Eventually 12 dyads were scheduled and completed participation in the balance of the study. Although no attempt was made to allocate specific proportions of male and female learners to the mixed and homogeneous groups, one male and five females were allocated to the native-led group and two males and five females to the Japanese-led group. This representation of learners within the research groups approximates the ratio of males to females in the two ESS clubs, about 1:4, although opportunistic selection of the teachers resulted in a ratio

of 11:1 across both research groups. All subjects completed a form indicating informed consent to participation (Appendix C).

Data Collection Sites

Although the 12 teachers indicated a willingness to participate at any convenient local site, it was felt that the ESS members would offer more relaxed assistance if they could be recorded on their own campus. Accordingly, most ESS members were recorded in conversation with a teacher (to whom they had not been introduced previously) on their own campuses; two were recorded on the alternative campus because of scheduling difficulties. Eight recording sessions were conducted in a partitioned area of the researcher's office. Four sessions were conducted on the alternative campus in the area of a language laboratory reserved for small group conversations. In all cases, the researcher was present in the same room as the subjects, although the technical nature of the recording (see Data Collection Procedures, below) permitted the researcher to "ignore" the dyad--to sit apart from the dyad and engage in activity unrelated to the dyadic conversations.

Collection and Coding of Data

Task Order

All dyads experienced the same five communication tasks in an order dictated by a standard Latin Square assignment of task order to each of the dyads in either the mixed or homogeneous group types (see Ferguson, 1981; Eames et al.,

1985). In practice, this meant that the order of the first dyad's tasks would be rotated by one task for the second dyad's scheduled combination, and so on until the last dyad for the group (NS-NNS or NNS-NNS) had worked through its scheduled tasks. The rationale for doing this was to reduce the carry-over effects which may be produced when all subjects undergo the same treatment order (Eames et al., 1985).

Task Description

The five communication tasks used in the study included 1) COM1, a lecture on how to find character strings in a text through use of the word processing program of a small, "laptop" computer (the NEC 8201A) without the computer physically present, 2) COM2, a demonstration of how to find character strings on the NEC 8201A with the computer physically present, 3) DIS, informal discussion of any topic of mutual interest to the participants (travel, holiday plans, computer, and so on), 4) LEG1, reconstruction of a small Lego (snap-together) toy with the participants sitting back-to-back and using a set of sequenced, graphic instructions supplied with the toy, and 5) LEG2, face-to-face reconstruction of a Lego toy of similar difficulty (re: LEG1) with one participant giving the instructions as the other assembled the pieces.

During the computer-based tasks, the teacher supplied information in an attempt to instruct the learner in use of the string search function, although the teacher had been

briefed to request periodic summaries from the learner. In addition, the hands-on demonstration involving the search function encouraged rather free exchange, questioning and gesturing by both participants. Both computer tasks focused on the teaching and learning of a particular computer function. The Lego reconstruction tasks, in contrast, were not so much instruction-oriented as problem-oriented. Although the teacher was asked to convey instructions without allowing the learner to see them, the Lego task required verbal cooperation from both participants in order to work towards reconstruction of the object. The essential difference between the two Lego tasks was that one (LEG1) required participants to communicate without visual feedback whereas the other (LEG2) made visual feedback the center of the activity. (See Wagner, 1983 for further discussion of Lego in conversation strategy research; Littlewood, 1981 for a description of Lego used in communicative language teaching.) The final task, open discussion of any interesting topic, resembled Long's (1980) unguided dyadic conversations: Cooperation is not directed towards the solution of a problem, nothing need be taught, no physical materials are hidden from view and yet none are typically available as conversational resources. This task was selected to allow participants a chance to structure their talk as background and knowledge dictated.

Data Collection Procedures

Prior to recording the dyadic conversations, all participants were briefed as to the nature of the data collection. The teachers were sent a packet containing a description of each task and additional materials which illustrated use of the string search function on the computer. The teachers and the researcher met a few days before a scheduled recording session and further briefed on the operation of the tasks with the learners. In particular, teachers had an opportunity to practice use of the computer and assembly of at least one of the Lego sets. A few minutes prior to the scheduled recording, the learners also received a general briefing on the nature of the tasks and their participation in them. Although they were not briefed in detail on what to expect, they were encouraged to participate actively in the conversations and to ask for information of use in completing a task whenever they needed it.

Just before recording commenced the teacher and learner were introduced and, depending on the scheduled first task, sat facing away from each other, towards each other, or side-by-side. The seating arrangements for all tasks are diagrammed as follows:

COM1: [] [] (side-by-side)
 [^] [^]
 T L

COM2: T>[]<L (face-to-face)

DIS: T>[]<L (face-to-face)

LEG1: []<T (back-to-back)
 L>[]

LEG2: T>[]<L (face-to-face)

The desk is represented with a "[]"; the participants' (T = teacher, L = learner) direction of sight is indicated by the "<", ">" and "^" symbols. Depending on the order of tasks established for a given dyad, the researcher arranged desks and briefed participants for their first task. During breaks between the remaining tasks, desks were arranged in the appropriate pattern and participants briefed as to their activity on the ensuing task. All tasks were conducted with the participants sitting and facing in the appropriate direction.

Once the participants had taken their initial positions, they were notified that they would continue each of the tasks uninterrupted for seven minutes and that they would have a two-minute break between each task. Task-specific instructions given to the participants just before beginning the tasks included the following:

1) COM1: The teacher was asked to teach the learner how to operate the computer's string search without direct manipulation of the computer or recourse to the text files it contained. (The teacher had previously studied a three-

page description of the function and rehearsed its operation.) The learner was notified that the teacher would occasionally request a summary of the instructions.

2) COM2: The teacher was asked to teach use of the search function through manipulation of the appropriate keys and use of any text file in the computer's memory. Participants were notified that they could point to or touch anything of use in the task situation, including the keys and screen display.

3) DIS: Participants were asked to agree on a topic of mutual interest shortly before the task began and to discuss the selected topic "freely", that is, without any attempt to teach or learn anything in particular. Both participants were specifically encouraged to contribute to the discussion whenever it seemed appropriate to do so. The researcher supplied a topic whenever the participants were unable to make their choice during the break.

4) LEG1: The teacher was handed a set of visual (i.e., non-text) instructions for the Lego toy and asked to relate information on the correct assembly of the toy to the learner. The teacher was also asked to help the learner to assemble the toy without looking at the learner's work. The disassembled toy was scattered on the learner's desk and the learner asked to assemble the toy in response to information supplied by the teacher. The learner was also instructed to keep the teacher informed as to whether an individual step in the procedure had been completed.

5) LEG2: The teacher received the visual instructions but was asked not to show them to the learner. The disassembled toy was scattered on the learner's desk and the learner asked to assemble the toy in response to the teacher's instructions. However, both participants were informed that they were free to point to objects, but that the teacher could not physically pick up and assemble pieces on the learner's behalf.

Each task was started by a verbal instruction to the participants to begin. As the signal to commence work was given, the researcher moved to the opposite end of the recording room, sat down at a desk and started a stopwatch and the recording equipment. No further communication between the researcher and the participants occurred during performance of the task, except for the verbal signal to the participants to stop their work a few seconds beyond the seven-minute mark.

Video and audio cassette recordings were made of all tasks. Videotaping was intended to provide a parallel record of the tasks which could be used to interpret problematic points in the audio record. Although videotaping can be a more obtrusive method of data collection than audiotaping, care was taken to make the videotaping as unobtrusive as possible. The video camera was placed approximately 2.5 meters from the subjects, focused just before conversation began and then left untouched for the duration of the five tasks. Also,

videotaping operations were started and stopped remotely from the researcher's position.

Audio taping employed two, clip-type microphones (one for each dyad member) with 3-meter cords feeding independently into a junction and then plugged into the microphone jack of a cassette recorder. Recorder operation was controlled from the researcher's position by use of a remote control switch and cable. The two-minute breaks between tasks were used by the participants to relax, or by the researcher to accomplish such housekeeping functions as checking the equipment and giving instructions for the next task. A complete session thus required less than one hour. Total recording time for both of the groups (mixed and homogeneous) was about 420 minutes or seven hours.

Coding and Treatment of the Data

The seven hours of recorded talk on the tasks were transcribed (transcription conventions are listed in Appendix F; transcription samples are in Appendix E) and recorded on a floppy disk for later manipulation with a personal computer. Each task was transcribed as a separate file and required an average of six-and-a-half typed pages of text. About 32.5 pages were required for each dyad and approximately 390 pages for the entire corpus. Text corresponding to the first minute of transcription was left uncoded; the following six minutes were coded and served as the basis for determining frequencies for repair and reference, the dependent variables. Coded transcripts for

each dyad's six minutes of talk averaged about 5.5 pages in length or about 330 pages for the coded corpus.

The following coding categories (in parentheses) were then added to the typed transcripts: 1) repair: clarification request (CCLAR), comprehension check (CCOM), confirmation check (CCON), definition (DDEF), display question (DDQ), echo (EECH), lexical uncertainty (LLEX), other-expansion (OOEXP), other-repetition (OOREP), referential question (RRQ), self-expansion (SSEXP), self-repetition (SSREP); 2) reference: anaphora (AANA), exophora (EEXO). Repairs and forms of reference originating with the learner were additionally coded with an S following the main code (thus, for example, RRQS).

Coding Reliability.

Nine NSS of English were trained by the researcher to recognize seven of the 14 repair and reference categories in context: comprehension checks, confirmation checks, display questions, indications of lexical uncertainty, referential questions, exophoric reference and anaphoric reference. Although the REs were selected randomly, both categories of reference were included deliberately because of their key conceptual position in the study. The nine coders were given 21 short excerpts (one to three turns long) of transcribed talk selected from the dyadic conversations of both groups and asked to allocate each excerpt to one category among the seven available. Specifically, the coders were asked to decide on a category for a word or

phrase underlined in the excerpt. Three examples of each category appeared on the raters' forms; these were randomly selected by the researcher for order of inclusion on the forms. Using index numbers for categories in the nine sets of coded excerpts in addition to the researcher's original coding of the same texts ($k = 10$), Kendall's Coefficient of Concordance W was calculated at .908 (Chi-square = 181.68, $df = 20$, $p < .0001$), a level of inter-rater reliability considered adequate for the study.

Analysis of Transcripts.

The frequency of each code in the discourse of each transcribed task was counted by running the word frequency program of a spelling checker widely used with a variety of word processors (The WORD Plus, see Holder, 1982). Ranked frequencies by task for all dependent variables were then compared with a Friedman Two-way Analysis of Variance by Ranks within each group type (mixed and homogeneous) following the plan outlined above in General Strategies for Data Analysis.

Analysis of variance within the scope of the general strategy was based on comparison of means for the various exponents of repair and reference, individually, by task and group: One exponent was the basis of each ANOVA table (excluding summary tables). Repair frequencies were compiled for each speaker in each dyad--making teacher-learner comparisons feasible for future use of the data; beyond this and the counting of descriptive data by dyad

participant, the hypothesis testing proceeded on the basis of comparing group by task without distinguishing between teachers and learners. The basic unit of analysis for the quantitative phases of the study thus remained the dyad.

Whenever an effect reached significance according to the pre-set criteria (see Table 1, above), Tukey's HSD multiple-comparison procedure was run on all combinations of group means within the ANOVA to locate the main sources of variance. Sources of variance (at both $p < .05$ and $< .01$) were ranked from highest to lowest and appear on the summary ANOVA tables in Chapter 4. Tukey's HSD test was selected because it represents a balance between power and conservative approaches to multiple comparison (Huck, et al., 1974; Nie et al., 1975), and is a widely known approach to post hoc analysis for groups with equal n 's (Ferguson, 1981). All analyses were conducted on a Macintosh Plus personal computer using StatView 512+ (Feldman & Gagnon, 1986) and CLR ANOVA (Clearlake Research, 1985).

The sampling procedure and focus of the qualitative analysis (Chapter 6) were based on the results of the analysis of variance. The first criterion for selection of transcripts was the significantly frequent use of a repair exponent in a particular task. Given post-hoc analysis of significant effects, it was possible to locate the main source(s) of variance by task. Thus, REs showing the most significant effects served as pointers to a relatively small number of transcripts, so that, for example, examination

of the form, function and context of display questions would focus on the 12 transcripts of the task in which display questions occurred most frequently.

An additional criterion for selection required a preliminary sampling of a group's transcripts to see whether REs appeared to co-occur, that is whether repair was accomplished in some patterned way so as to suggest a closer look at how such co-occurring REs were involved in negotiated exchanges. One way of looking at this basis for selection is that it leads to examination of naturally occurring pairs which would not otherwise be studied in a research design emphasizing treatment of dependent variables, one at a time. Prospective candidates for study of how different REs function together, for example, might include expression of lexical uncertainty co-occurring with definition. One extension of this way of organizing examination of the transcripts is the notion of overlapping task categories (see the discussion of complementary task structures in Chapters 5 and 6). This notion was mentioned briefly in connection with the categorical structure of the research design. It re-emerges in connection with the qualitative strategy because it offers a method for selecting a very limited number of REs which occur frequently together in transcripts which fit the overlapping descriptions. An example of this would be the set of 12 transcripts which fall within the category of expository approaches to teaching tasks, that is, selection of the 12

transcripts for COM1.

The choice of which parts of these transcripts to excerpt and compare was handled opportunistically; that is, it was based on the researcher's best judgement following a process of establishing and revising categories in which to elaborate the various forms of the RE (or set of REs) under consideration. This sort of pragmatic (as opposed to probabilistic) sampling is further discussed in Goetz and Le Compte (1984) and Merriam and Simpson (1984).

Preliminary Treatment of the Data

Assessing Homogeneity within Groups

Table 2 summarizes the level of homogeneity within each group (that is, the level of individual dyadic differences within each group) by all dependent variables as tested by Friedman's Two-way Analysis of Variance by Ranks. All Chi-square values have been corrected for tied ranks (thus increasing somewhat the chances of obtaining a significant value for Chi-square).

Three of the REs and one form of reference listed in Table 2--confirmation checks, display questions, indications of lexical uncertainty and exophora--were employed more frequently by one or more of the dyads within each of the groups than by the remaining dyads in the groups. This evidence of heterogeneity can be put into some perspective by pointing out that the repair behavior of the mixed group was paralleled by that of the homogeneous group (the sources

Table 2

Level of Homogeneity Within Groups by Dependent Variable

Variable	Chi-square by group		Major source of rank order differences (mixed/homogeneous)	
	Mixed	Homogeneous		
Clarification request	8.89	8.44	--	--
Comprehension check	11.87*	14.96*	LEG1 > DIS/LEG1 > DIS	
Confirmation check	8.74	17.64*	--	LEG2 > DIS
Definition	8.12	8.55	--	--
Display question	16.72*	14.07*	COM1 > LEG1/COM1 > LEG2	
Echo	6.62	8.14	--	--
Lexical uncertainty	12.73*	12.96*	DIS > LEG2/DIS > LEG2	
Other-expansion	12.91*	.67	LEG1 > COM2	--
Other-repetition	4.13	4.85	--	--
Referential question	15.14*	8.79	DIS > COM1	--
Self-expansion	8.89	4.21	--	--
Self-repetition	5.28	14.31*	--	COM1 > DIS
Anaphora	3.06	8.17	--	--
Exophora	17.20*	17.52*	LEG2 > LEG1/LEG2 > LEG1	

Note. df = 4 in all cases

* $p < .025$

of significant differences were the same) and noting, prospectively, that virtually all sources of within-group differences indicated during preliminary treatment of the data were replicated during the analysis of variance (see Chapter 4, Table 22).

One way of looking at these parallel results is that proficiency in English was apparently not responsible for within-group differences in the homogeneous (Japanese-Japanese) group since these differences were also found in a group with native speakers of English. Another is that individual or idiosyncratic differences are also unlikely to have been responsible for these particular differences since they occurred in both groups. Moreover, in two cases (use of comprehension checks and display questions, i.e., behaviors typically associated with teachers conducting instruction) the parallel outcomes suggest that some of the teachers in both groups may have been performing in a similar "teacherly" fashion. Without developing this discussion beyond a fairly simple level of explanation, it may be useful to mention that these preliminary results anticipate those obtained in the analysis of variance in terms of fundamental between-group similarities and sources of variance within tasks. Although the homogeneity of the groups is clearly a mixed affair (about half of the dependent variables showed some degree of within-group difference) a number of areas in which homogeneity was not demonstrated turn out to be recurrent patterns which expand

to become characteristic of both groups during performance of specific tasks.

Assessing the use of Transformations

Table 3 lists seven of the 14 dependent variables ranging from the least to the greatest degree of skewness.

Table 3

Comparison of Selected Transformed and Untransformed Variables by Significance of ANOVA Effects

Dep. var.	Skew	Normality Test	p	Treatment of dependent variable by transformation and level of significance (group-task)		
				Sq. root	Log.	Untrans.
Comp. check	1.851	.272	.018	.792-.000	.768-.000	.850-.000
Conf. check	1.817	.188	.073	.582-.000	.430-.000	.683-.000
Def.	1.364	.315	.007	.179-.011	.167-.008	.193-.017
Exo.	1.323	.217	.046	.733-.000	.797-.000	.976-.000
Other- rep.	.980	.183	.078	.578-.061	.752-.044*	.485-.085
Self- rep.	.565	.103	.212	.585-.000	.494-.000	.688-.000
Echo	.271	.109	.200	.619-.004	.620-.006	.599-.005

* movement from a non-significant to a significant value
at $p < .05$

The coefficient of normality and associated level of

significance (via StatView 512+) indicate that definitions and comprehension checks are positively skewed to a severe degree ($p < .025$), although all of the remaining variables are positively skewed to lesser degrees, including several which show what might be termed moderate skewness. Among the possible remedies for skewness of this range, Tabachnick and Fidell (1983) recommend a square root transformation for moderate positive skewness and a logarithmic transformation for severe positive skewness, noting, at the same time the value of retaining the data in its original form. Both transformed and untransformed distributions for the listed variables were then used in a series of ANOVAs. Significant effects for group ($df = 1$) and task ($df = 4$) were compared in order to establish the extent to which transforming the distributions for repair and reference affected significance levels. (A table of F values for Table 3 will be found in Appendix G.)

In 13 of 14 cases transformation altered neither the significance of the result nor the overall relationship of mean scores across tasks for a given variable. In one case, other-repetition, the logarithmic transformation moved the probability value for the effects for task from slightly above a typical critical value of .05 (square root and untransformed) to slightly below .05. Since transformation appeared to have virtually no effect on the significance of the results, all analyses of variance were conducted and evaluated using the original (untransformed) distributions.

Summary

This chapter has focused on the design of the study and the procedures used to carry it out. Bases for the factorial design were outlined and a strategy for implementation of the design through analysis of variance was linked to a procedure for hypothesis testing. A combination of conservative, largely exploratory procedures was outlined for the initial phase of the research strategy, while more aggressive, directional hypothesis testing was outlined for the secondary phase of the study. Beyond the analysis of variance, a qualitative evaluation of selected transcripts was described for the last stage of the research strategy.

At the center of the research methodology is the comparison of frequencies for conversational repair occurring in five task situations undertaken by two kinds of teacher-led dyads: mixed, consisting of a native English-speaking teacher and a Japanese learner of English, and homogeneous, consisting of a Japanese teacher of English and a Japanese learner of English.

The results of the analysis of variance are presented in Chapter 4. These findings will then be interpreted and related to the research design in Chapter 5.

CHAPTER 4:

QUANTITATIVE ANALYSIS OF THE DATA

This chapter begins with a summary of results for the nine descriptive features which were not calculated on the basis of intra-textual codings. Although the summary is not part of the hypothesis-testing strategy, it does follow the pattern established in the research design for comparison of tasks and groups. Next, results from the analysis of variance are presented in two sections, the first reporting results for comparisons between individual tasks and the second for comparisons between tasks combined or selected on the basis of the distinction between expository and experiential activity. Each of these sections is further divided into results for the two sets of variables coded within the transcribed texts--reference and repair.

The Descriptive Features of Talk

by Group and Task

Tables 4, 5, 6, 7, 8, and 9 report the means and standard deviations for three categories of descriptive features by group and task: words (total words, words per minute (WPM), unique words, type-token ratio (TTR)), utterances (total utterances, words per utterance (WPU) and turns (total turns, words per turn (WPT), utterances per turn (UPT)). Since each table summarizes results for one half of the design (one group at a time), the number of dyads in each is 6, i.e., $n = 6$. All decimal fractions have

been rounded to the nearest hundredth.

Table 4 shows a fairly symmetrical relationship between the total word and WPM averages attained by the teacher and by the learner. In general, as teachers spoke more, learners spoke less, the greatest gap of this sort occurring during the face-to-face Lego task (LEG2); total word count, for example, averaged about 712 words for teachers and 152 words for learners. Learners were most likely, however, to speak during ordinary conversation (DIS) whereas teachers were more likely to reduce the rate of their own speech during this task to accommodate the learners. Talk during DIS in the mixed-group dyads was more evenly balanced in terms of total words, WPM, unique words and TTR (respectively, $T = 445.33/L = 370.17$, $T = 74.22/L = 61.70$, $T = 178.67/L = 147.00$, $T = .40/L = .41$) than during other tasks.

Highest average TTRs for learners were achieved during experiential activity, during the two tasks which entailed observing and manipulating objects, COM2 (.47) and LEG2 (.42). The teachers' highest average TTR was also achieved during DIS (.40); the lowest average for the entire mixed group (.24), however, was attained by teachers during LEG2.

Whereas DIS and LEG2 were generally responsible for producing the highest and lowest means for the word-based measures (depending on the role of the participant), at the dyadic level COM1, the most "lecture-like" task, was

Table 4

Means and Standard Deviations for Word-based Measures of
Conversational Activity by Mixed-group Task

Variable	Task				
	COM1	COM2	DIS	LEG1	LEG2
	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>
Total words					
dyad	864.33 71.30	822.33 127.95	815.50 89.64	746.67* 121.52	864.67** 103.60
teacher	670.67 77.11	665.83 129.33	445.33* 108.35	523.83 87.49	712.17** 82.04
learner	192.50 93.30	156.50 45.79	370.17** 96.71	222.83 39.98	152.50* 39.13
WPM					
dyad	144.03 11.86	137.06 21.32	135.92 14.94	124.45* 20.25	144.08** 17.26
teacher	111.92 13.03	110.97 21.55	74.22* 18.06	87.31 14.58	118.70** 13.67
learner	32.09 15.55	26.09 7.63	61.70** 16.12	37.14 6.66	25.42* 6.52
Unique words					
dyad	247.50 16.95	251.17 17.58	325.83** 30.02	219.50* 13.17	235.00 23.37
teacher	179.67 22.40	180.33** 20.25	178.67 34.14	140.33* 15.48	165.33 11.98
learner	67.67 24.70	71.00 10.00	147.00** 26.58	79.17 3.19	61.33* 6.35
TTR					
dyad	.29 .03	.31 .04	.40** .01	.30 .04	.27* .02
teacher	.27 .02	.28 .04	.40** .05	.27 .04	.24* .02
learner	.38 .08	.47** .10	.41 .05	.36* .06	.42 .08

** highest mean among five tasks; * lowest mean among five tasks.

virtually identical to LEG2 in terms of total number of words and WPM generated. Moreover, comparisons of means at the dyadic level across the five tasks indicate a narrow range for each of the word-based measures, except for TTR. When teacher or learner constituents of the dyads are considered individually, however, much larger gaps between the means become evident.

Summary figures for the homogeneous group (Table 5) are similar to those for the mixed group. Although homogeneous dyads, taken as a group, used a larger number of words and WPM during COM1 than during the four other tasks, the symmetrical, teacher-learner production of words is most clearly indicated in DIS and LEG2: Compared to their performance on other tasks, teachers used their lowest average number of words (about 412) and WPM (about 69) in ordinary discussion while learners produced their highest averages during discussion (about 347 and 58, respectively). Just the reverse was true for word production (total words and WPM) during the face-to-face Lego task; teachers spoke the most and learners the least during LEG2.

The central position of DIS and LEG2 as far as word-based measures is concerned was also indicated by both the dyads' and the individual participants' use of unique words, and by TTR. On the average, dyads, teachers and learners used the largest number of unique words--and achieved their largest TTRs--during undirected discussion. With the

Table 5

Means and Standard Deviations for Word-based Measures
of Conversational Activity by Homogeneous-group Task

Variable	Task				
	COM1	COM2	DIS	LEG1	LEG2
	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>
Total words					
dyad	794.50** 64.68	714.50 75.03	758.67 51.87	704.33* 50.24	744.67 104.88
teacher	545.50 132.58	540.83 79.55	411.67* 148.82	534.83 89.22	627.33** 111.49
learner	249.00 84.08	173.67 66.13	346.67** 109.78	169.17 54.70	117.33* 18.42
WPM					
dyad	132.42** 10.78	119.08 12.50	126.44 8.65	116.56* 9.78	124.14 17.45
teacher	90.92 22.10	90.14 13.26	68.61* 24.80	89.14 14.87	104.56** 18.58
learner	41.50 14.01	29.61 12.23	57.78** 18.30	28.20 9.12	19.56* 3.07
Unique words					
dyad	204.50 24.80	191.00 24.02	275.00** 35.74	203.17 59.37	175.50* 16.83
teacher	154.83 40.68	150.83 13.09	168.50** 62.91	147.67 28.74	145.33* 21.48
learner	92.33 17.89	72.50 25.70	148.50** 38.72	71.83 17.49	56.83* 5.19
TTR					
dyad	.26 .03	.27 .04	.36** .04	.29 .08	.24* .02
teacher	.29 .04	.30 .05	.41** .02	.28 .02	.24* .03
learner	.39* .08	.44 .10	.44** .04	.43 .04	.49 .09

** highest mean among five tasks; * lowest mean among five tasks.

exception of learners (whose lowest average TTR is associated with COM1), the lowest TTRs for the dyads in general and teachers in particular are associated with LEG1. These results closely parallel those for the mixed group.

Two further parallels between the two groups are, first, the position of COM1 as a strong generator of words at the dyadic level, eclipsing LEG1 in terms of total words and WPM and, second, the relatively narrow range of averages among the five tasks at the dyadic level as compared with the much greater range for teachers and learners. At the level of total words, for example, the range for the dyad is about 90 words (between COM1 and LEG1), on the average; the teachers' range is about 216 words, while the learners' is about 229, between DIS and LEG2.

When utterance-based measures for the mixed group are considered (Table 6), a polarity between COM1 and LEG2 emerges. With one exception--that of the learner generating the highest number of WPU during DIS--COM1 was the source of the smallest, and LEG2 the largest, number of utterances. The largest gap between these two tasks was found in the teachers' talk (roughly 65 utterances as compared with the learners' gap, about 15 utterances). WPU were at their highest average level, on the other hand, during COM1 and at their lowest during LEG2. For teachers, this lengthening of utterances during instruction about use of the computer, as compared with face-to-face construction of Lego, averaged

about four words (3.68). Although learners, like teachers, used the greatest number of utterances during LEG2, their

Table 6

Means and Standard Deviations for Utterance-based Measures of Conversational Activity by Mixed-group Task

Variable	Task				
	COM1	COM2	DIS	LEG1	LEG2
	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>
Utterances					
dyad	133.00*	166.50	133.67	140.50	180.67**
	17.39	24.18	22.49	32.62	24.57
teacher	72.33*	95.50	79.33	78.00	136.83**
	9.87	17.01	42.20	14.64	34.44
learner	63.50*	66.00	68.17	71.00	76.50**
	12.99	11.98	12.54	13.96	10.05
WPU					
dyad	7.00**	5.22	5.84	5.49	4.63*
	1.17	1.12	1.03	.94	.76
teacher	9.48**	7.15	7.05	8.01	5.80*
	1.23	1.95	2.28	1.86	1.03
learner	2.93	2.38	5.41**	3.19	1.98*
	.97	.62	.71	.51	.38

** highest mean among five tasks; * lowest mean among five tasks.

largest increase in WPU (3.43) occurred when they were free to discuss whatever they liked.

Utterance-based measures for the homogeneous group (Table 7) were very similar to those obtained for the mixed

group. Both the pattern of extreme average values between COM1 and LEG1, and the lengthening of learners' utterances between LEG1 and DIS are reflected in the tables. Learners in the homogeneous group, however, used more utterances on the average during back-to-back Lego construction than

Table 7

Means and Standard Deviations for Utterance-based Measures of Conversational Activity by Homogeneous-group Task

Variable	Task				
	COM1	COM2	DIS	LEG1	LEG2
	Mean SD	Mean SD	Mean SD	Mean SD	Mean SD
Utterances					
dyad	122.50*	163.00	146.67	154.00	187.83**
	21.14	31.01	28.66	12.02	24.92
teacher	63.33*	94.83	79.67	83.50	122.50**
	11.24	10.53	23.28	6.72	21.30
learner	59.17*	68.17	67.00	70.50**	65.33
	15.47	23.78	9.90	8.17	9.81
WPU					
dyad	6.72**	4.49	5.30	4.61	3.83*
	1.69	.80	.87	.59	.54
teacher	8.82**	5.73	5.78	6.45	5.18*
	2.63	.82	1.80	1.24	.83
learner	4.19	2.61	5.46**	2.38	1.82*
	.71	.87	2.43	.65	.32

** highest mean among five tasks; * lowest mean among five tasks.

during face-to-face construction.

Some differences between the mixed and homogeneous

groups on turn-based measures will now be considered. Table 8 shows that most turns among the mixed group were taken during performance of the face-to-face Lego task;

Table 8

Means and Standard Deviations for Turn-based Measures of Conversational Activity by Mixed-group Task

Variable	Task				
	COM1	COM2	DIS	LEG1	LEG2
	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>
Total turns					
dyad	75.83	81.17	73.33*	82.67	91.50**
	15.87	15.37	21.06	9.83	29.66
teacher	39.00	42.00	36.67*	40.67	48.00**
	7.72	8.07	10.63	3.27	14.31
learner	36.83	39.17	36.67*	40.33	43.33**
	8.23	7.36	10.48	4.27	15.85
WPT					
dyad	11.91**	10.49	11.90	9.14*	10.55
	3.35	2.87	3.78	1.48	4.60
teacher	18.09**	16.47	13.47	12.92*	16.21
	5.51	5.15	6.05	2.17	6.37
learner	5.26	4.02	10.37**	5.55	3.98*
	2.28	1.03	2.31	1.02	1.74
UPT					
dyad	1.86	2.00	1.90	1.68*	2.28**
	.49	.16	.40	.28	.83
teacher	1.93	2.29	1.86	1.68*	2.74**
	.53	.26	.32	.42	.63
learner	1.78	1.69*	1.95	1.76	2.01**
	.47	.14	.53	.29	.90

** highest mean among five tasks; * lowest mean among five tasks.

fewest were taken during the discussion task (Dyad: 91.50 vs. 73.33; Teacher: 48.00 vs. 36.67; Learner: 43.33 vs. 36.67). Learners took their longest turns (WPT) during discussion, however, while teachers took theirs during performance of COM1. Overall, very small differences were found among the tasks at the dyadic level. UPT, another measure of turn length, was generally at its highest level during LEG2 (Lego constructed face-to-face) and at its lowest level during LEG1 (Lego constructed back-to-back), although learners were more likely to make the fewest utterances per turn when undertaking the computer demonstration (COM2).

The homogeneous group generally differed from the mixed group on the turn-based measures (Table 9). The clearest differences between groups were found in averages for total turns and WPT. The homogeneous group, for example, took its greatest number of turns during LEG1 (with LEG2 the source of most turns for the mixed group). Although teachers in both groups demonstrated a common low average frequency for UPT in the back-to-back Lego task (1.68 for the mixed group and 1.98 for the homogeneous group), learners in the two groups differed as to their production of utterances. UPT means for the mixed group of learners were highest during COM1. Homogeneous group learners, on the other hand produced their highest average number of utterances per turn during COM1.

Inspection of the tables reveals one point of

similarity between groups which occurred in many of the other measures of conversational activity, namely the teachers' preference for talk during COM1 and the learners'

Table 9

Means and Standard Deviations for Turn-based Measures of Conversational Activity by Homogeneous-group Task

Variable	Task				
	COM1	COM2	DIS	LEG1	LEG2
	Mean SD	Mean SD	Mean SD	Mean SD	Mean SD
Total turns					
dyad	54.17*	72.67	77.83	87.33**	71.17
	24.98	13.92	23.76	14.42	10.81
teacher	27.83*	37.00S	39.83	43.00**	37.33
	12.38	7.40	12.48	6.78	5.68
learner	26.33*	35.33	37.83	43.67**	33.83
	12.61	6.74	11.27	8.36	5.34
WPT					
dyad	19.15	10.23	11.12**	8.34*	10.56
	13.08	2.77	5.52	1.56	1.43
teacher	25.40**	15.49	10.75*	12.67	16.99
	18.98	5.68	2.90	2.75	3.10
learner	11.35	4.83	11.38**	4.07	3.55*
	5.94	1.21	9.27	1.72	.90
UPT					
dyad	2.71	2.29	2.13	1.81**	2.69
	1.22	.49	1.01	.31	.51
teacher	2.73	2.68	2.31	1.98*	3.32**
	1.37	.78	1.28	.33	.60
learner	2.69**	1.92	1.94	1.66*	2.00
	1.27	.44	.78	.34	.53

** highest mean among five tasks; * lowest mean among five tasks.

preference for talk during DIS, Tables 8 and 9 show these relatively high levels of talk (relative to talk in other tasks) in the form of words uttered per turn. Learners in both groups produced their largest average number of WPT on the discussion task, DIS, whereas teachers in both groups produced theirs during COM1.

The scope and significance of task and group differences will now be summarized. Unlike the preceding descriptive section, the following sections report results obtained from analyses of variance on values for repair and reference and evaluate the extent to which the results support the hypotheses. No detailed examination of the means and standard deviations will be presented here (see Appendix K for the complete listing by dyad, teacher and learner). Although occasional reference will be made to teacher-learner differences, the fundamental unit of analysis will be the dyad.

The Analysis of Variance: Repair by Group and Individual Task (H1-H2)

H1: The frequency of repair in dyads does not vary significantly by group membership or type of task performed.

Among the 12 repair exponents (REs) tested, 10 showed significant effects for task: clarification request, comprehension check, confirmation check, definition, display question, echo, lexical uncertainty, referential question, self-expansion and other-expansion. Two (other-expansion and other-repetition) showed no effects for group or task.

No significant interactions between group and task were noted. The null hypothesis for task is thus rejected for 10 of 12 REs at $p < .025$ and accepted for the remaining two at $p > .025$. The null hypothesis is accepted for the group factor at $p > .025$. The tables and figures which follow describe these results in greater detail.

Clarification Request: CCLAR

A trend towards a significant effect for group was noted for CCLAR ($F = 5.172$, $df = 1$, $p = .046$, $> .025$). At

Table 10

Effects of Group Membership and Task on Clarification

Requests

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	40.017	40.017	5.172	.046	
Error	10	77.367	7.737			
Task	4	101.900	25.475	5.646	.001*	
G x T	4	15.233	3.808	.844	.506	
Error	40	180.467	4.512			.68

* $p < .025$.

the same time clear differences between tasks were indicated ($F = 5.646$, $df = 4$, $p = .001$), with significant differences ($p < .05$) noted specifically between discussion on the one hand and the two Lego tasks on the other, and between the first computer task (COM1) and back-to-back Lego. The Lego tasks comprise the central source for clarification requests among the five tasks. Figure 4 depicts these differences in

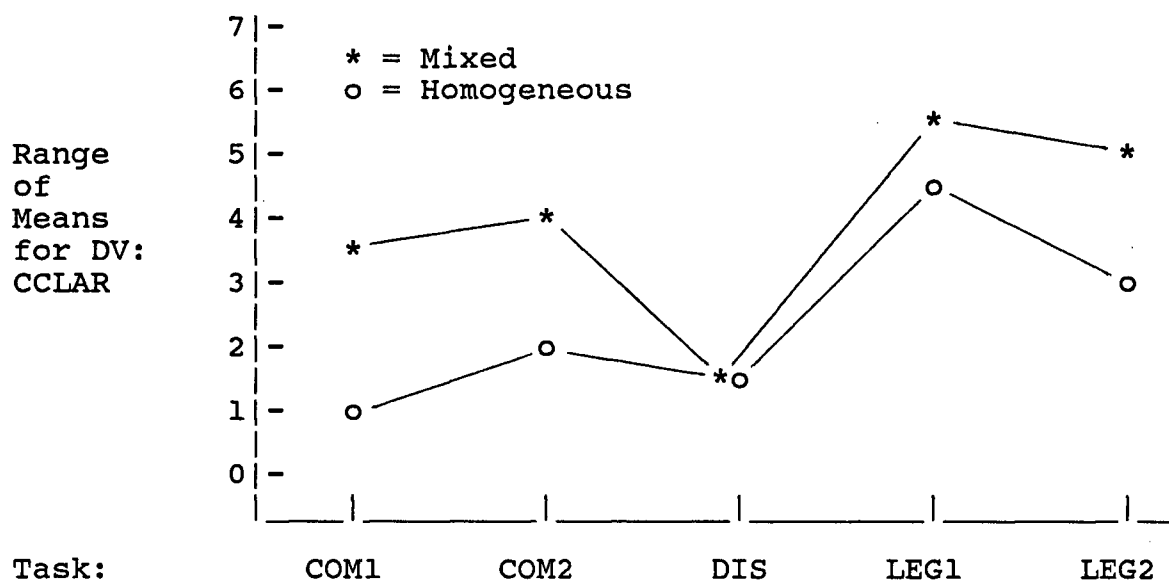


Figure 4. Plot of means by task for CCLAR.

Comprehension Check: CCOM

Table 11 indicates a significant effect for task

Table 11

Effects of Group Membership and Task on Comprehension

Checks

Source of variation	df	Sum of squares	Mean square	F	p	Epsil. corr.
Group	1	.26	.26	.038	.850	
Error	10	70.87	7.09			
Task	4	184.43	46.11	11.191	.001*	
G x T	4	17.567	4.39	1.066	.386	
Error	40	638.867	15.972			.57

* $p < .025$.

($p = .001$) during comprehension checks, a repair type

employed almost exclusively by the teachers in both groups. Contrasts between all task means showed that CCOM was used significantly more frequently ($p < .05$) during the back-to-back Lego task than it was during any of the four other tasks, as is illustrated in Figure 5.

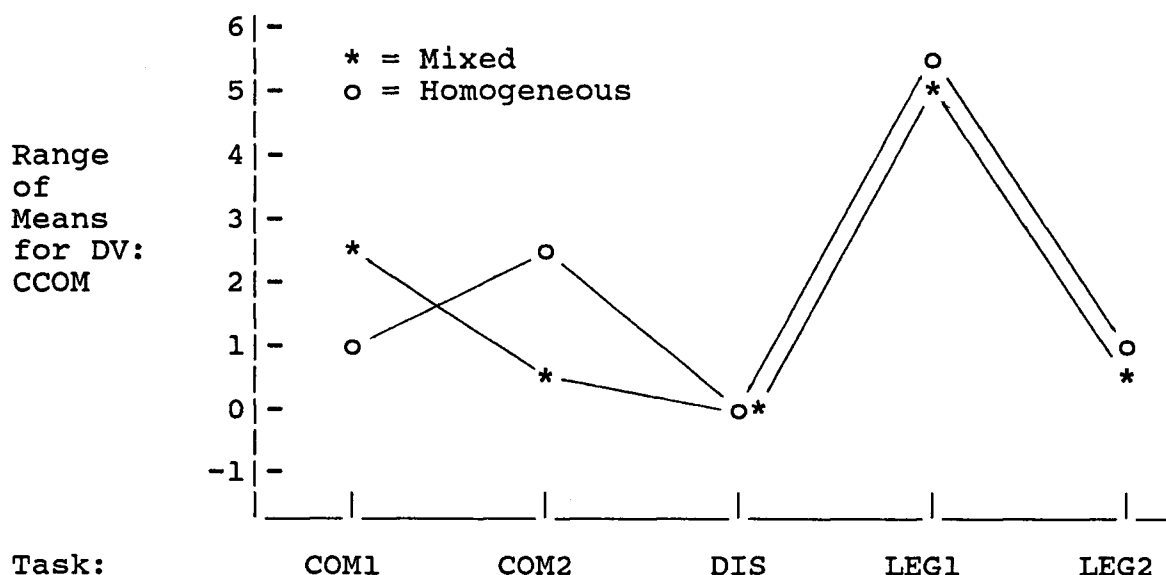


Figure 5. Plot of means by task for CCOM.

Confirmation Check: CCON

Although the magnitude of differences between tasks is virtually the same for both comprehension checks and confirmation requests (respectively, $F = 11.191$, $df = 4$, $p = .001$ and $F = 11.680$, $df = 4$, $p = .001$), the major source of variance within CCON (Table 12) is the face-to-face (rather than back-to-back) Lego task. LEG2 is significantly different from all other tasks at $p < .05$ and from all tasks except LEG1 at $p < .01$. It is also interesting to note that group means were virtually

interesting to note that group means were virtually

Table 12

Effect of Group Membership and Task on Confirmation Checks

Source of variation	df	Sum of squares	Mean square	F	p	Epsil. corr.
Group	1	6.017	6.017	.177	.683	
Error	10	339.633	33.963			
Task	4	746.167	186.542	11.680	.001*	
G x T	4	32.567	8.142	.510	.729	
Error	40	638.867	15.972			.51

* $p < .025$.

identical for each of the two Lego tasks for both CCOM and CCON. Figure 6 shows the relatively high level of confirmation checks during performance of LEG2.

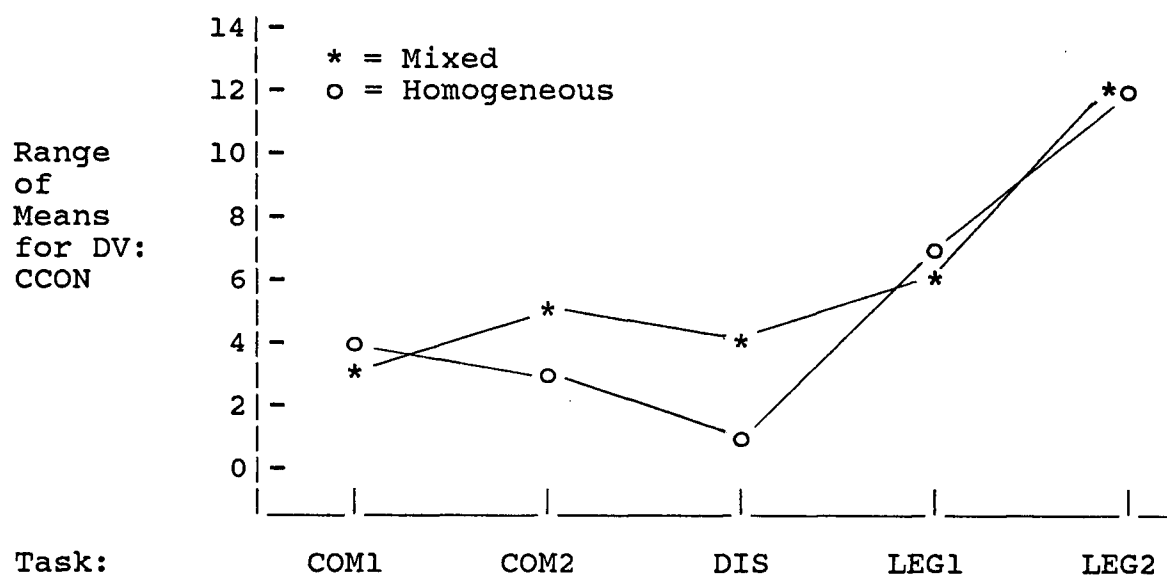


Figure 6. Plot of means by task for CCON.

Table 13 shows that within-group (i.e., task) differences for definition also reached significant levels ($F = 3.434$, $df = 4$, $p = .017$), largely through the

Table 13

Effects of Group Membership and Task on Definitions

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	2.817	2.817	1.899	.198	
Error	10	14.833	1.483			
Task	4	15.567	3.892	3.434	.017*	
G x T	4	3.100	.775	.684	.607	
Error	40	45.333	1.133			.61

* $p < .025$.

contribution of teachers in both groups during the description of the computer's string search function (COM1). As Figure 7, following, indicates, the differences between

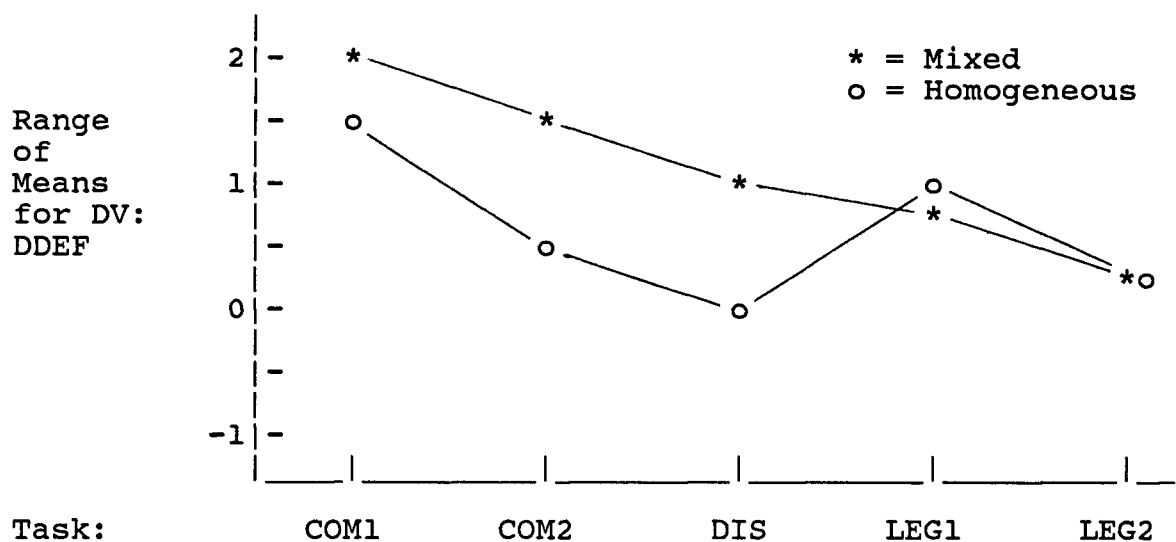


Figure 7. Plot of means by task for DDEF.

this task and, respectively, discussion and back-to-back

this task and, respectively, discussion and back-to-back Lego were relatively large and, following pairwise comparisons of means, significant ($p < .05$). Although definitions were employed infrequently, they occurred significantly more frequently during COM1 than during either DIS or LEG2.

Display Question: DDQ

Tasks are clearly distinguished in Table 14 by the frequency of display questions ($F = 23.220$, $df = 4$, $p = .001$). Overall, DDQs were most likely to occur during COM2, the face-to-face demonstration of the computer's

Table 14

Effects of Group Membership and Task on Display Questions

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	11.267	11.267	1.130	.313	
Error	10	99.733	9.973			
Task	4	834.233	208.558	23.220	.001*	
G x T	4	44.900	11.225	1.250	.306	
Error	40	359.267	8.982			.74

* $p < .025$.

string search function. As Figure 8 shows, COM2 served as the pivotal source of significant differences between tasks, although COM1 was found to be a secondary source of differences between tasks. These two tasks were significantly different from the others ($p < .01$) in terms of the frequency of display questions.

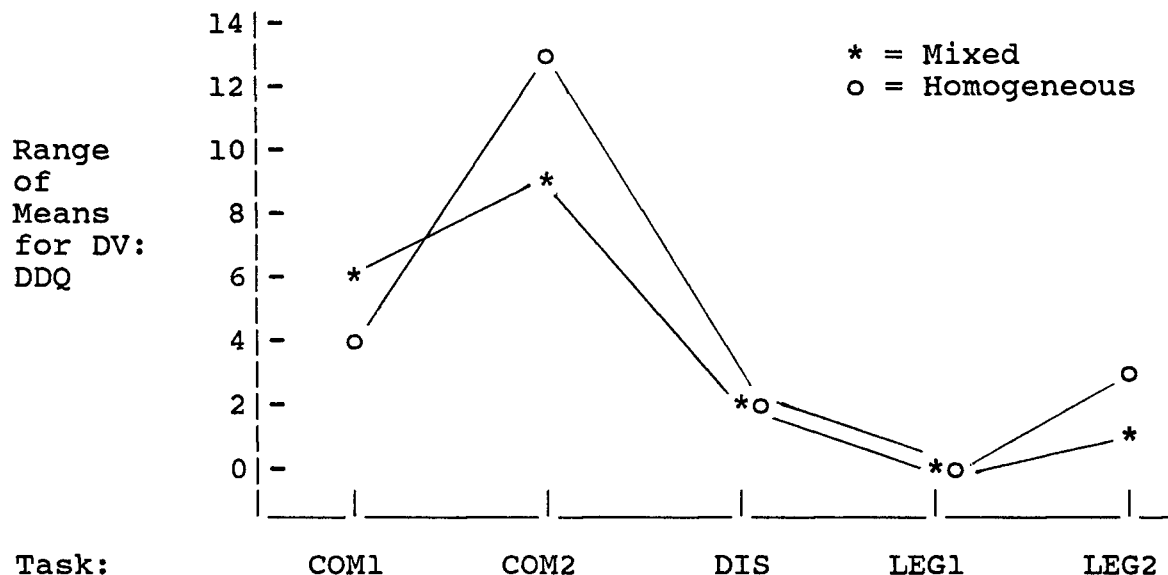


Figure 8. Plot of means by task for DDQ.

Echo: EECH

A significant effect for task was also found when examining the frequency of echoes ($F = 4.455$, $df = 4$, $p = .005$). For both groups EECH was least frequent during

Table 15

Effects of Group Membership and Task on Echoes

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	5.400	5.400	.295	.599	
Error	10	183.000	18.300			
Task	4	224.667	56.167	4.455	.005*	
G x T	4	30.600	7.650	.607	.660	
Error	40	504.333	12.608			.81

= $p < .025$.

free discussion and most frequent during the computer tasks.

However, as Figure 9 indicates it was the difference between COM1 and COM2 on the one hand and DIS on the other which served as the major sources of variance (significant at $p <$

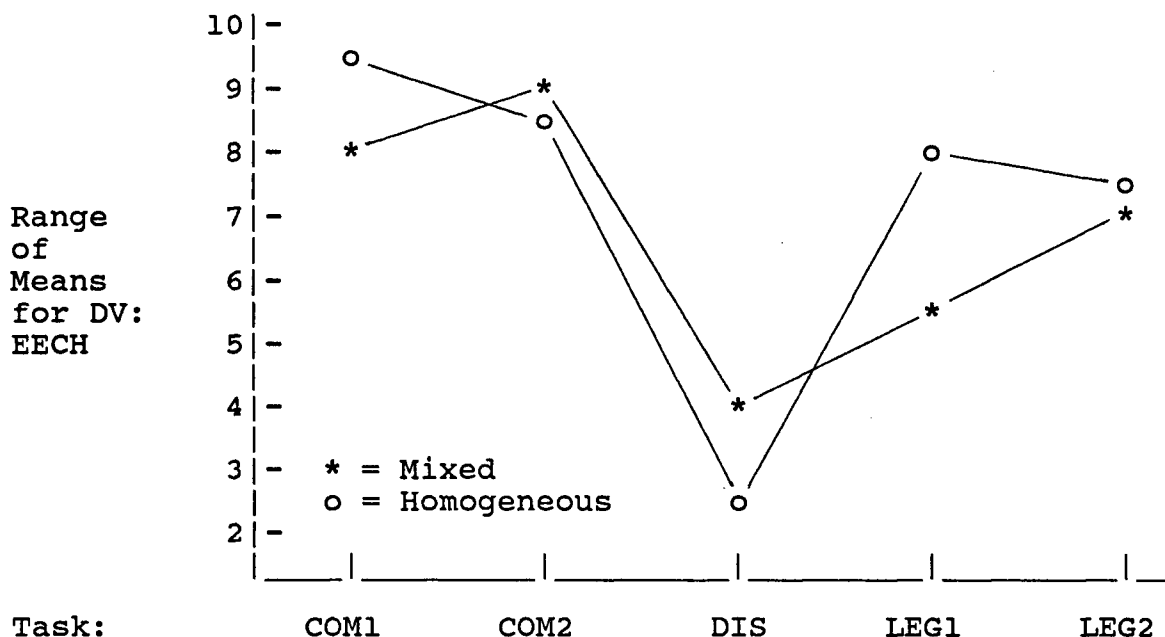


Figure 9. Plot of means by task for EECH.

Lexical Uncertainty: LLEX

Lexical uncertainty was most frequently expressed by participants in both groups during free discussion; it was least likely to be expressed during the computer demonstration (COM2) and face-to-face Lego (LEG2) tasks. All task differences taken together (Table 16) indicated a significant main effect for task ($F = 8.016$, $df = 4$, $p = .001$).

Table 16

Effects of Group Membership and Task on Lexical Uncertainty

Source of variation	df	Sum of squares	Mean square	F	p	Epsil. corr.
Group	1	2.817	2.817	.910	.363	
Error	10	30.967	3.097			
Task	4	71.767	17.942	8.016	.001*	
G x T	4	9.100	2.275	1.016	.411	
Error	40	89.533	2.238			.51

* $p < .025$.

Post hoc pairwise comparisons between means (Figure 10)

indicated that the effect was attributable to the contrasts between DIS and the two tasks which entailed face-to-face manipulation of objects: LEG2 and COM2. These differences

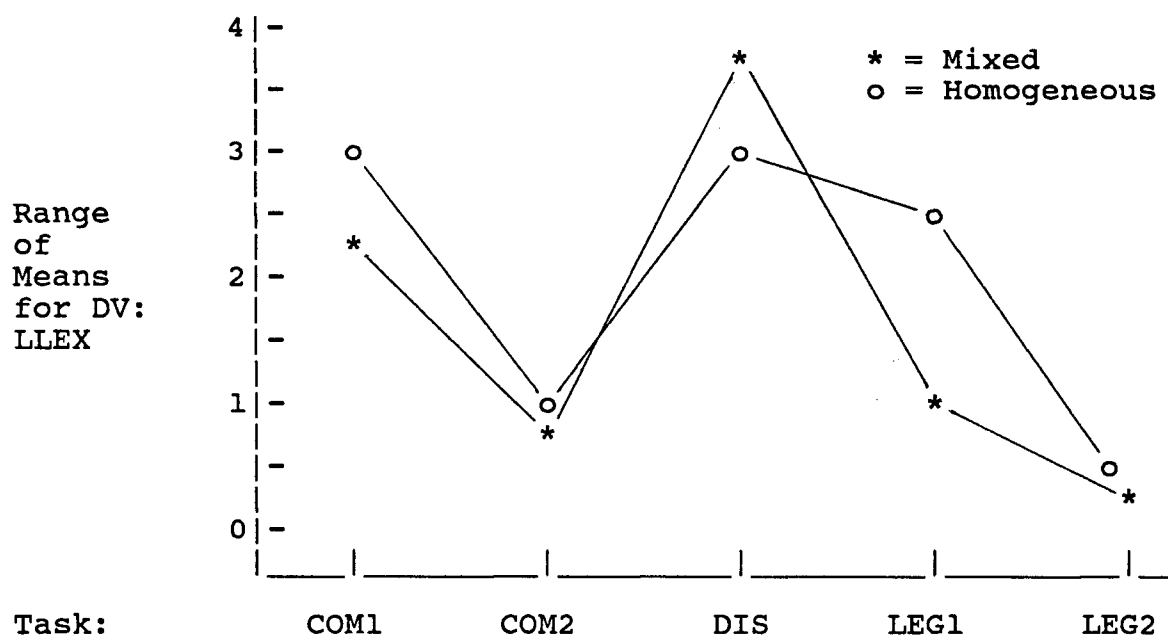


Figure 10. Plot of means by task for LLEX.

were significant at $p < .01$. Significant differences at

$p < .01$ were also found between COM1 and LEG2.

Other-expansion: OOEXP

Other-repetition: OOREP

Neither task nor group effects were noted for OOEXP (Table 17) and OOREP (Table 18) following the criterion established for significance ($p < .025$), although results for OOREP suggested a possible trend towards significance for task ($F = 2.208$, $df = 4$, $p = .085$). Since no significant differences were found for these RE's, no specific examination will be made of the means.

Table 17

Effects of Group Membership and Task on Other-expansion

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	18.150	18.150	.767	.402	
Error	10	236.700	23.670			
Task	4	44.400	11.100	1.210	.322	
G x T	4	27.600	6.900	.752	.562	
Error	40	366.800	9.170			.70

Table 18

Effects of Group Membership and Task on Other-repetition

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	20.41	20.417	.525	.485	
Error	10	388.83				
Task	4	100.90	25.225	2.208	.085	
G x T	4	28.500	7.125	.624	.648	
Error	40	457.000	11.425			.66

Referential Question: RRQ

Table 19 shows an effect for task ($F = 11.920$, $df = 4$, $p = .001$) which is reflected in the difference between the relatively small number of RRQ's during computer instruction (COM1, COM2) and the relatively high number

Table 19

Effects of Group Membership and Task on Referential Questions

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	12.150	12.150	.594	.459	
Error	10	204.700	20.470			
Task	4	1347.567	336.892	11.920	.001*	
G x T	4	60.767	15.192	.538	.709	
Error	40	1130.467	28.262			.62

* $p < .025$.

during non-instructional tasks (DIS, LEG1, LEG2).

Comparison among the means indicates that the significant differences ($p < .05$) lie between each of the computer tasks and each of DIS, LEG2 and LEG1 (the sequence here indicating significant differences between means from highest to lowest). A similar pattern of significant differences appeared at $p < .01$, although specific comparisons between COM2 and LEG1/LEG2 were not significant at this level. A graph of the means (Figure 11) reveals that the pattern for RRQ was a virtual mirror image of the pattern for DDQ (i.e., a significant concentration of referential questions during

the non-teaching tasks).

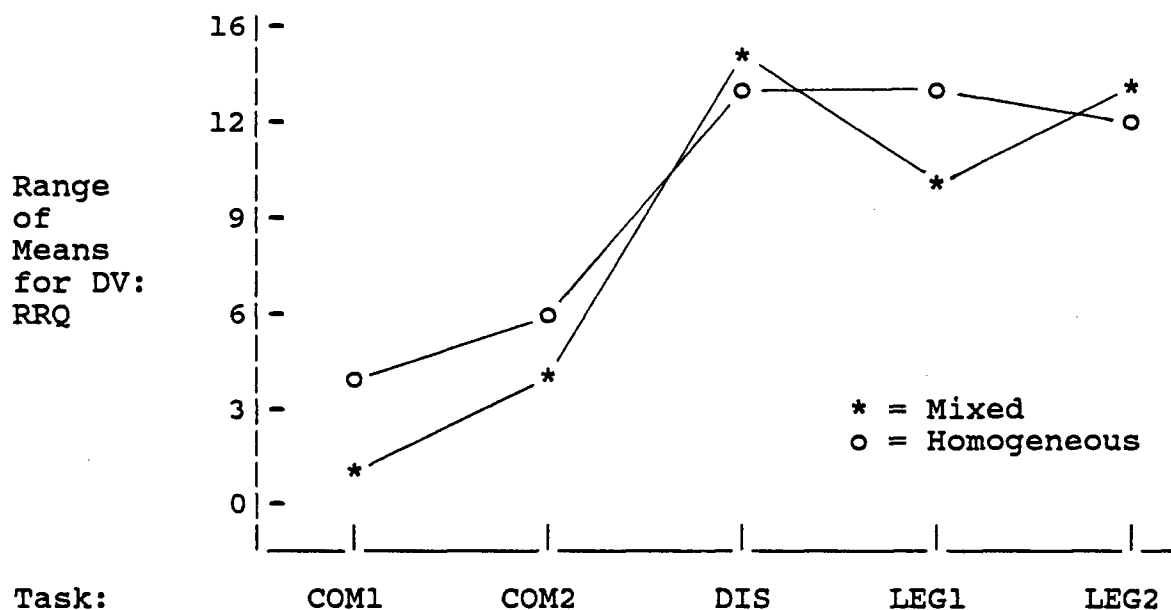


Figure 11. Plot of means by task for RRQ.

Self-expansion: SSEX

The rate of self-expansion varied significantly by task ($F = 3.167$, $df = 4$, $p = .024$) but not by group, as

Table 20

Effects of Group Membership and Task on Self-expansion

Source of variation	df	Sum of squares	Mean square	F	p	Epsil. corr.
Group	1	570.417	570.417	2.004	.187	
Error	10	2846.433	284.643			
Task	4	599.567	149.892	3.167	.024*	
G x T	4	406.167	101.542	2.146	.093	
Error	40	1893.067	47.327			.62

* $p < .025$.

Table 20 shows. A trend towards the interaction of group and task which did not reach significance was also observed. Closer inspection of the means (Figure 12) indicates a

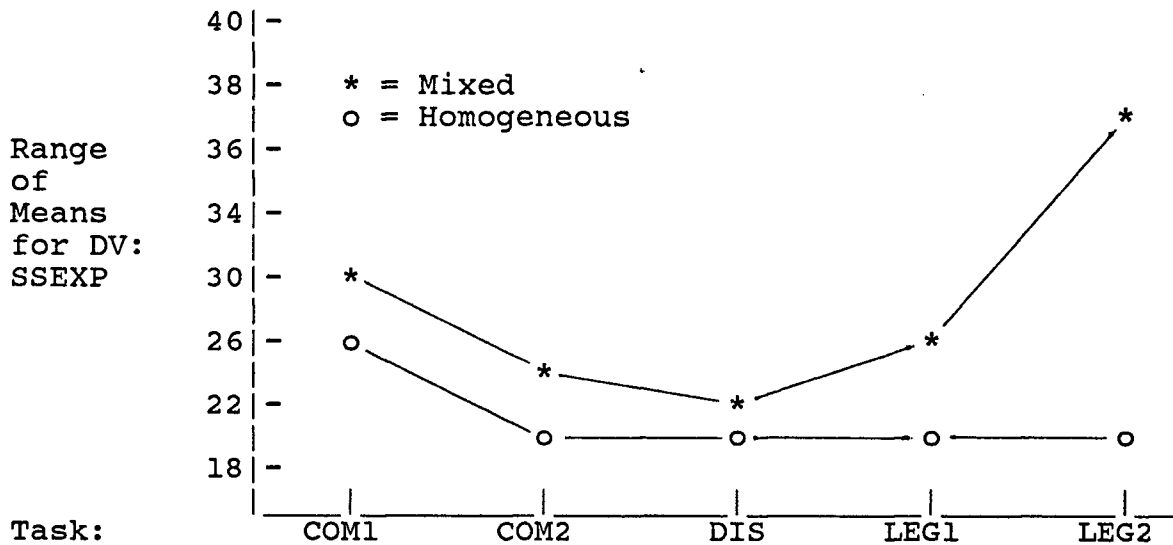


Figure 12. Plot of means by task for SSEX.

fairly low frequency for SSEX by task except for LEG2, and, in particular, the response of the mixed group to LEG2. Although the performance of the mixed dyads produced a significant difference ($p < .05$) between DIS and LEG2, no other significant differences between the means for self-repetition by task were found.

Self-repetition: SSREP

Table 21 shows that the occurrence of self-repetition differed significantly by task ($F = 7.829$, $df = 4$, $p = .001$) but not by group or the interaction of group and task. Unlike the significantly frequent use of SSEX during face-to-face Lego, however, it was the relatively infrequent use of SSREP during ordinary discussion which served as the

source of the effect for task. All dyads employed

Table 21

Effects of Group Membership and Task on Self-repetition

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	26.667	26.777	.171	.688	
Error	10	1562.867	156.287			
Task	4	1964.667	491.167	7.829	.001*	
G x T	4	488.667	122.167	1.947	.121	
Error	40	2509.467	62.737			.78

* $p < .025$.

self-repetition significantly less frequently during DIS than during LEG2, followed by COM1 and then COM2 ($p < .01$). Figure 13 illustrates this relationship among the tasks.

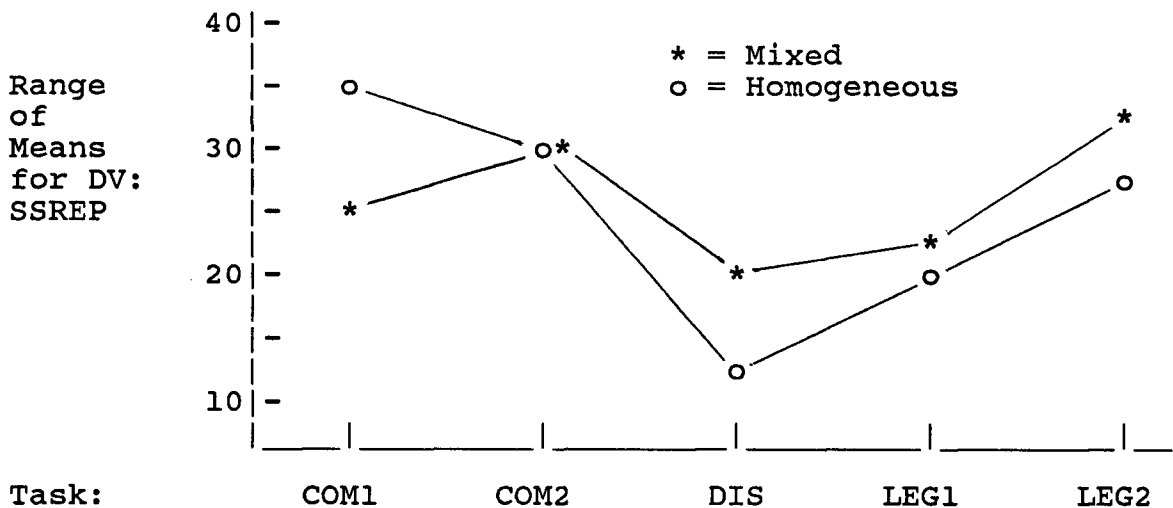


Figure 13. Plot of means by task for SSREP.

Table 22 summarizes all significant effects (i.e., those associated with task) by RE and details the major

sources of variance within each effect. Sources are listed by the magnitude of difference between means, from large to small. Thus, for each RE, the largest difference between two means is listed first, followed by the next largest, and so on until the smallest significant difference is encountered.

As the table indicates, definitions, display questions and echoes were associated with the days' performance of the two teaching tasks, COM1 and COM2. The main sources for production of clarification requests, comprehension checks, confirmation checks, expressions of lexical uncertainty, referential questions and self- and other-expansions, on the other hand, were the non-teaching tasks, DIS, LEG1 and LEG2. DIS was the primary setting for production of referential

Table 22

Significant Repair Exponents and Sources of Variance for All Tasks

Repair exponent	F ratio	p	Main sources of variance	
			p < .05	p < .01
Clarification request	5.646	.001	LEG1 > DIS LEG2 > DIS	LEG1 > DIS --
Comprehension check	11.191	.001	LEG1 > DIS LEG1 > LEG2 LEG1 > COM2 LEG1 > COM1	LEG1 > DIS LEG1 > LEG2 LEG1 > COM2 LEG1 > COM1

table continues

Table 22 (cont'd.)

Significant Repair Exponents and Sources of Variance for All Tasks

Repair exponent	F ratio	p	Main sources of variance	
			p < .05	p < .01
Confirmation check	11.680	.001	LEG2 > DIS LEG2 > COM2 LEG2 > COM1 LEG2 > LEG1	LEG2 > DIS LEG2 > COM2 LEG2 > COM1 --
Definition	3.434	.017	COM1 > LEG2 COM1 > DIS	-- --
Display question	23.220	.001	COM2 > LEG1 COM2 > LEG2 COM2 > DIS COM2 > COM1 COM1 > LEG1	COM2 > LEG1 COM2 > LEG2 COM2 > DIS COM2 > COM1 COM1 > LEG1
Echo	4.455	.005	COM2 > DIS COM1 > DIS	COM2 > DIS COM1 > DIS
Lexical uncertainty	8.016	.001	DIS > LEG2 DIS > COM2 COM1 > LEG2 COM1 > COM2	DIS > LEG2 DIS > COM2 COM1 > LEG2 COM1 > COM2
Referential question	11.920	.001	DIS > COM1 DIS > COM2 LEG2 > COM1 LEG2 > COM2 LEG1 > COM1 LEG1 > COM2	DIS > COM1 DIS > COM2 LEG2 > COM1 -- LEG1 > COM1 --
Self-expansion	3.167	.024	LEG2 > DIS	--
Self-repetition	7.829	.001	LEG2 > DIS COM1 > DIS COM2 > DIS	LEG2 > DIS COM1 > DIS COM2 > DIS

questions and expressions of lexical uncertainty (followed by LEG1 and LEG2), whereas LEG1 and LEG2, in particular,

were primary sources for clarification requests, comprehension checks, confirmation checks, and self- and other-repetition. These results apply to the task performances of both groups of dyads: Repair of talk during the tasks was not significantly related to the fact that half of the groups were led by native speakers of English and half by Japanese.

H2: The frequency of reference in dyads does not vary significantly by either group membership or task performed.

Both types of reference, anaphora and exophora, showed significant effects for task. As in the case of repair, no effects for group and none for the interaction of group and task were significant. With respect to task, the null hypothesis is thus rejected for reference at $p < .025$ and accepted for group (at $p > .025$). Tabular results for each ANOVA, one for anaphora (Table 23) and one for exophora (Table 24) as the dependent variables, are presented below. A single graphic representation of task means for both of these variables however, is also presented (Figure 14) and is intended to illustrate the complementary allocation of both forms of reference during each of the tasks.

Anaphora: AANA

Although a trend towards group differences in the use of anaphora is indicated in Table 23, only the effect for task was significant ($F = 3.178$, $df = 4$, $p = .023$, $< .025$). COM1 was the source of least anaphora, LEG1 the

Table 23

Effects of Group Membership and Task on Anaphoric Reference

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	735.000	735.000	4.102	.070	
Error	10	1791.933	179.193			
Task	4	2529.167	632.292	3.178	.023*	
G x T	4	518.833	129.708	.654	.628	
Error	40	7936.400	198.410			.69

* $p < .025$.

greatest; differences between the means for these tasks were significant ($p < .05$).

Exophora: EEXO

Whereas AANA showed a trend towards group differences, EEXO was employed by dyads in both groups to a nearly identical degree ($F = .001$) during the five tasks.

Table 24

Effects of Group Membership and Task on Exophoric Reference

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	.067	.067	.001	.976	
Error	10	710.533	71.053			
Task	4	23539.667	5884.917	48.108	.001*	
G x T	4	393.600	98.400	.804	.530	
Error	40	4893.133	122.328			.51

* $p < .025$.

Significant differences were found between tasks, however ($F = 48.108$, $df = 4$, $p = .001$). Moreover, extreme values for

exophora were achieved in the two Lego tasks, the highest mean for EEXO during face-to-face Lego and the lowest during back-to-back Lego. These extremes served as poles for the other tasks: Significant differences between means for LEG2 and all other tasks, and between LEG1 and the other tasks, were noted ($p < .01$).

Relationships between means for AANA and EEXO are presented in graphic form together in Figure 14. Figure 14 indicates that as one form of reference increased in frequency, the other tended to decrease. (But see LEG2, a major source of both forms of reference, for the exception to this trend.) Thus, anaphora is at a high level relative to exophora during COM1, the lecture about the computer

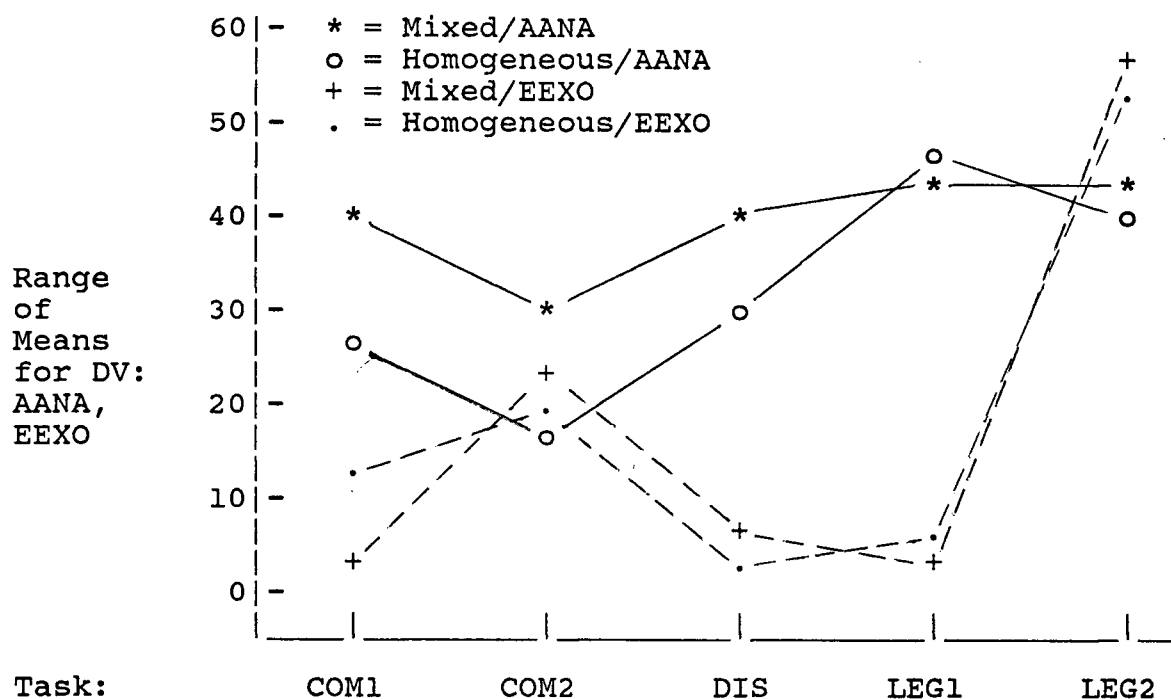


Figure 14. Plot of means by group and task for AANA and EEXO

search function. These positions change during COM2, the computer demonstration, so that anaphora becomes slightly less frequent, on the average during COM2.

LEG2, the only other task besides COM2 which entailed seeing and pointing out objects, boosted the frequency of both exophora and anaphora. Exophora was generated significantly more frequently during face-to-face Lego than during any of the other tasks. Anaphora, moreover, occurred at roughly the same levels in both LEG2 and LEG1, although homogeneous dyads working through the back-to-back Lego task used anaphoric reference at a somewhat greater frequency than their mixed-dyad counterparts, thus making LEG1 a relatively more frequent source of anaphoric reference than COM2

Table 25 summarizes all significant effects by category

Table 25

Significant Reference Categories and Sources of Variance for All Tasks

Reference category	F ratio	p	Main sources of variance	
			p < .05	p < .01
Anaphora	3.187	.023	LEG1 > COM2	--
Exophora	48.108	.001	LEG2 > LEG1 LEG2 > DIS LEG2 > COM1 LEG2 > COM2 COM2 > LEG1 COM2 > DIS COM2 > COM1	LEG2 > LEG1 LEG2 > DIS LEG2 > COM1 LEG2 > COM2 COM2 > LEG1 COM2 > DIS COM2 > COM1

of reference and lists the major sources of variance within each effect. As in the case of repair, these sources are listed by the magnitude of difference between means, from large to small.

The Analysis of Variance:

Repair and Reference in Groups During Combined and Selected Tasks

The following results are based on two treatments of the data designed to compare tasks on the basis of their experiential and expository characteristics. The first treatment combined and then averaged LEG2 and COM2, the two tasks which allowed participants to observe and point out objects in their immediate environment, into a new independent variable designated, for purposes of analysis, as EXPER1--the experiential task category. EXPER1 was compared with COM1, the only task category which did not allow participants to observe and point out objects in the conversational environment and which required the teaching of functional procedures abstractly, that is, without direct experience with the object of instruction. COM1 was re-designated as EXPOS1--the expository task--for purposes of the analysis. This treatment of the data will be referred to below as EXPER-EXPOS1.

DIS, the free discussion task, and LEG1, a non-teaching information-exchange task, were dropped from the analysis. Although LEG1 could have been used as the expository stem in the EXPER-EXPOS treatment of the data outlined above, it was

a relatively unimpressive source of anaphoric reference (Table 25) and remained conceptually less interesting as a source of expository activity than COM1, a task largely directed towards the teaching of cognitive knowledge. Nevertheless, LEG1 was used in a supplementary exploration of the EXPER-EXPOS dimension, the results of which are summarized in Appendix H.

The second treatment of the data simply selected LEG2 and COM1 (re-designated, respectively, as EXPER2 and EXPOS2) for comparison without the influence of the remaining three task variables. This treatment of the data will be referred to as EXPER-EXPOS2

One object of combining and selecting tasks in these ways was to examine how experiential and expository tasks differ when a teaching orientation is integrated into the experiential task, through creation of EXPER1, and when it is not, through use of EXPER2. The results of ANOVAs employing each set of task categories (EXPER-EXPOS1 and EXPER-EXPOS2) are reported together inasmuch as they were designed to test the same directional hypotheses.

Repair During Experiential and Expository Activity (H3)

H3: Repair occurs significantly more frequently during tasks which emphasize experiential activity than during tasks which emphasize expository activity.

In general, each set of ANOVAs produced very similar results. Significant differences ($p < .05$) between experiential and expository tasks were shared by EXPER-

EXPOS1 and EXPER-EXPOS2 on four of the twelve repair exponents (confirmation checks, definitions, lexical uncertainty and referential questions). EXPER-EXPOS1 and EXPER-EXPOS2 also shared non-significant task differences for the remaining eight REs (clarification requests, comprehension checks, display questions, echoes, other-expansions, other-repetitions, self-expansions and self repetitions). H3 thus finds only limited support, i.e., with respect to four of the twelve repair exponents.

The only cases of significant between-group differences (clarification requests) and significant group/task interaction (self-repetition) found thus far in the analysis of variance also occurred in both EXPER-EXPOS1 and EXPER-EXPOS2. Although this finding does not specifically relate to H3, it does suggest some interesting differences between the mixed and homogeneous groups which will be discussed in the next chapter.

Results for the two sets of ANOVAs are summarized in detail in Table 26. The ANOVA tables which document these results are contained in Appendix I (for EXPER-EXPOS1) and Appendix J (for EXPER-EXPOS2).

Among the four REs which showed significant effects for task, two were more frequent during the experiential tasks (confirmation checks and referential questions) and two were more frequent during the expository tasks (definitions and expressions of lexical uncertainty). Thus, when the point

Table 26

Significant Repair Categories and Sources of Variance for
Experiential and Expository Tasks Using COM1 as the
Expository Stem

Repair exponent	ANOVA				Main sources of variance (p <)	
	EXPER-EXPOS1		EXPER-EXPOS2			
	F ratio	p	F ratio	p	.05	.01
Clar. request	11.125	.008	7.895	.019	M > H M > H	M > H --
Confirm. check	8.360	.016	14.426	.004	EL > EY EL > EY	-- EL > EY
Definition	5.768	.033	14.426	.004	EY > EL EL > EY	-- EL > EY
Lexical uncert.	14.989	.003	12.707	.005	EY > EL EY > EL	EY > EL EY > EL
Refer. question	28.324	.003	44.471	.001	EL > EY EL > EY	EL > EY EL > EY
Self- rep.	6.805	.026	8.282	.016	at EXPOS1: H > M at EXPER1: M > H at EXPOS2: H > M at EXPER2: M > H	

Note. Groups: M = Mixed, H = Homogeneous; Tasks: EL =
 Experiential, EY = Expository; df = 1 in all cases

of comparison was entirely restricted to experiential and
 expository tasks, the number of repair exponents which
 differed on the basis of task was considerably narrowed from

the initial list of 12. This was just as much the case when the experiential task was oriented towards teaching as it was when the experiential task contained no such orientation, that is, when it was entirely concerned with constructing a Lego toy.

The interaction between group and task (illustrated in Figure 15) is somewhat more complex than the simple main effects otherwise noted in Table 26.

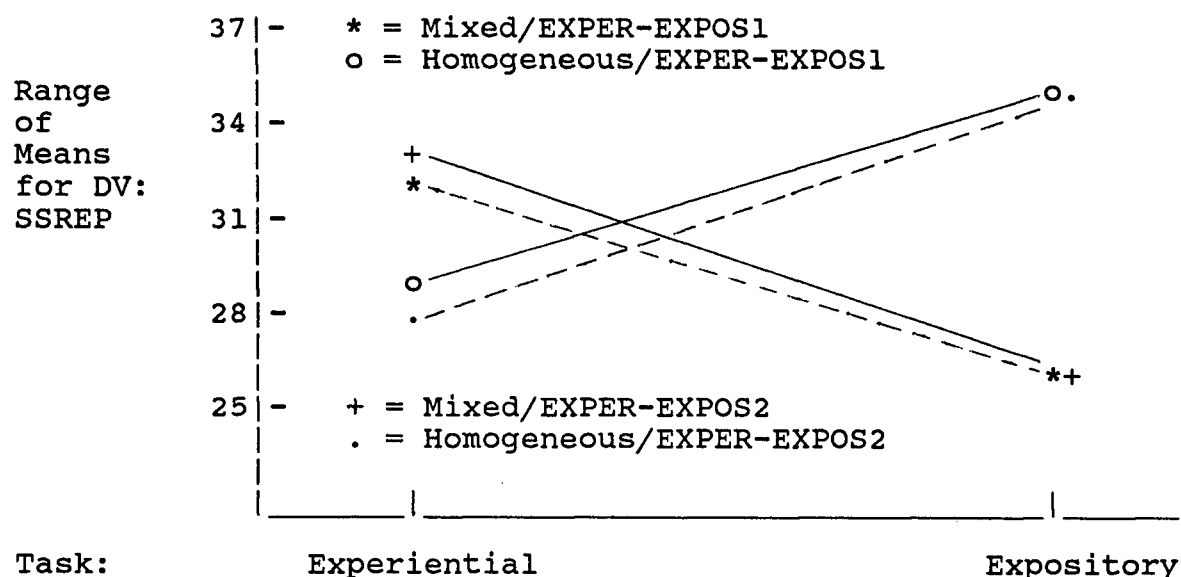


Figure 15. Plot of means by group and experiential-expository tasks for SSREP

One characteristic of this plot is the similarity of group patterns for self-repetition during the experiential tasks. Regardless of whether the experiential task was oriented towards teaching or not, dyads led by a Japanese teacher produced significantly more self-repetition than dyads led by a native speaker of English. Conversely, dyads led by native English speakers were responsible for

producing significantly more self-repetition during COM1, the teaching-oriented expository task, than dyads led by the Japanese speakers of English.

Anaphoric Reference During
Experiential and Expository Activity (H4a)

H4a: Anaphoric reference occurs significantly more frequently during tasks which emphasize expository activity than during tasks which emphasize experiential activity.

As noted in the previous section, results from the analysis of anaphora rejected the assumption that there were no differences between task frequencies. Given a five-task within-subjects factor, AANA was found to occur more frequently during LEG1 than COM2. A question remains, however, whether this finding also extends to the contrast between independent variables specifically constructed (EXPER-EXPOS1 and EXPER-EXPOS2) to reflect the distinction between experiential and expository tasks. These two kinds of task have been associated with the conceptual framework for the study and can be examined further with the use of reference in order to distinguish between them.

Comparison of EXPER1 and EXPOS1 revealed no significant differences in the dyads' use of anaphoric reference, although a trend for between-group differences was noted ($F = 4.167$, $df = 1$, $p = .068$). When means for EXPER2 (the uncombined, non-training-oriented Lego task) and EXPOS2 are compared (Table 27), however, a significant effect for task is observed: $F = 5.558$, $df = 1$, $p < .040$. (This difference

Table 27

Effects of Group Membership and Selected Tasks on Anaphoric

Reference: Contrasting LEG2 with COM1 (EXPER-EXPOS2)

Source of variation	df	Sum of squares	Mean square	F	p	Epsil. corr.
Group	1	345.042	345.042	1.294	.282	
Error	10	2667.083	266.708			
Task	1	392.042	392.042	5.558	.040*	
G x T	1	77.042	77.042	1.092	.321	
Error	10	705.417	70.542			1.00

* $p < .05$

rather closely resembles the one reported above (see Table 25) for the difference in use of anaphoric reference during the back-to-back Lego and computer demonstration tasks).

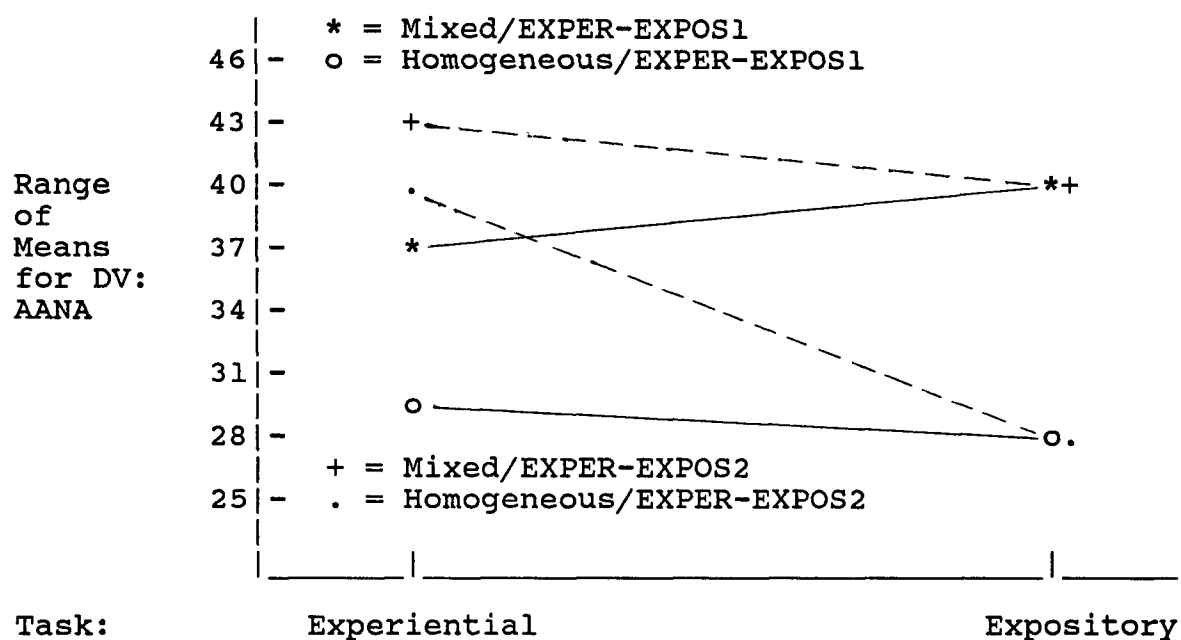


Figure 16. Plot of means by group and experiential-expository tasks for AANA.

Anaphora was found to be even more frequent during the experiential task than during the expository task, as is indicated in Figure 16. The results are consistent with those obtained during comparisons among the full range of five tasks. H4a thus finds no support from the data reported here.

Exophoric Reference During

Experiential and Expository Activity (H4b)

H4b: Exophoric reference occurs significantly more frequently during tasks which emphasize experiential activity than during tasks which emphasize expository activity.

Recalling results for exophora reported during the examination of H2, significant differences were found between LEG2 and COM2 on the one hand and the remaining three tasks on the other. Indeed, although anaphora was frequent during the back-to-back Lego task (LEG1), exophora was significantly more frequent than anaphora during this task. As Table 28 and 29 indicate, similar results were obtained for both sets of comparisons between the experiential and expository tasks: For EXPER-EXPOS1, $F = 49.258$, $df = 1$, $p = .001$; for EXPER-EXPOS2, $F = 57.794$, $df = 1$, $p = .001$.

Table 28

Effects of Group Membership and Selected Tasks on ExophoricReference: Contrasting LEG2 and COM2 with COM1 (EXPER-EXPOS1)

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	38.760	38.760	.353	.566	
Error	10	1099.104	109.910			
Task	1	6224.260	6224.260	49.258	.001*	
G x T	1	213.010	213.010	1.686	.223	
Error	10	1263.604	126.360			1.00

* $p < .05$

Table 29

Effects of Group Membership and Selected Tasks on ExophoricReference: Contrasting LEG2 with COM1 (EXPER-EXPOS2)

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	5.042	5.042	.021	.889	
Error	10	2451.417	245.142			
Task	1	14162.042	345.042	57.794	.001	
G x T	1	345.042	345.042	1.408	.263	
Error	10	2450.417	245.042			1.00

* $p < .05$

These results uniformly support Hypothesis 4b. The consistency with which the groups produced exophora under both forms of experiential task is indicated in Figure 17.

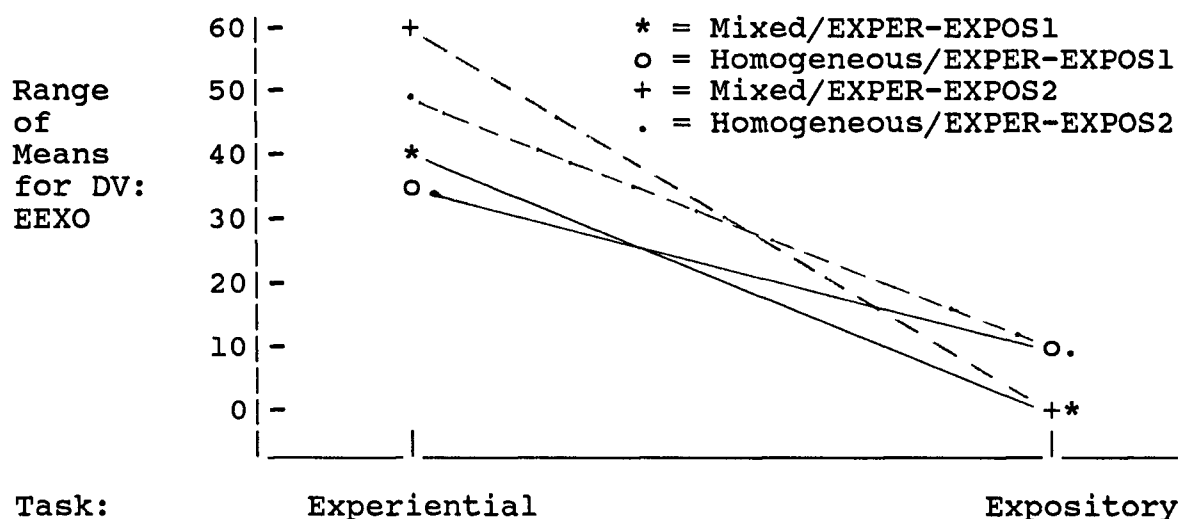


Figure 17. Plot of means by group and Experiential-Expository tasks for EEXO.

Summary

Analysis of variance was used to test five hypotheses about the effect of task or group on repair and reference.

At the initial level of analysis, in which all tasks were compared on each of the 12 repair exponents and two forms of reference, significant differences between tasks were found for 10 of the 12 REs (except other-expansion and other-repetition), and for reference. The results also indicated an allocation of RE to task: clarification requests, comprehension checks, confirmation checks, expressions of lexical uncertainty, referential questions, self-expansions and self-repetitions to the non-teaching tasks (DIS, LEG1, LEG2), definitions, display questions and echoes to the teaching tasks (COM1, COM2). Both forms of reference, anaphora and exophora, occurred with greatest

frequency in the non-teaching tasks. At the same time, no significant differences between the mixed and homogeneous groups were found. The null hypotheses, that there are no significant differences between tasks in the frequency of repair (H1) and reference (H2), were thus rejected.

The second level of analysis focused on the effect of two theorized task constructs, experiential tasks and expository tasks, on the production of repair and reference. Regardless of whether the experiential task was oriented to teaching (LEG2 + COM2) or not (LEG2 alone), only four of the initial list of REs differed significantly on the basis of task: confirmation checks and referential questions (most closely associated with the experiential tasks), definitions and indications of lexical uncertainty (typically associated with the expository task).

Significant differences between the native speaker-led and Japanese-led groups were found only for clarification requests, whereas the frequency of self-repetition was found to differ on the basis of both group membership and task. The homogeneous dyads produced the greatest amount of self-repetition during the experiential tasks and the least during the expository task; just the reverse obtained for the mixed group. On the basis of these results one of three directional hypotheses (H3) gained partial support, that is, a level of support limited to four of the twelve REs.

One of the directional hypotheses (4a) was not supported by the data; anaphora was, in fact, used at a

higher mean frequency during one of the experiential tasks (contrary to the hypothesis) and at about the same mean frequency during the other. The final hypothesis (H4b), however, was strongly supported by results obtained for both groups in both sets of tasks. Exophora was generated significantly more often during experiential tasks than during the expository task.

Discussion and interpretation of these results follows in Chapter 5.

CHAPTER 5:

DISCUSSION OF THE ANALYSIS OF VARIANCE

This chapter concludes the analysis of variance through a discussion of results presented in the previous chapter. The discussion is organized into sections keyed to the major research questions. Although these questions have been "answered" in the limited context of the hypotheses, that is, with reference to a particular set of data and research conditions, this discussion is intended to interpret and suggest explanations for the results with reference to the broader background of research in SLA and second language education. It should be stressed that these interpretations are based on the quantitative treatment of repair and reference and not, for the moment, on an examination of repair and reference as qualities of spoken texts.

What has been learned so far?

The Use of Repair by Group and Task

The General Lack of Group Differences

One of the clearest findings in this study is the broad lack of differences between groups in the use of repair: The foreign- and Japanese-led dyads were largely indistinguishable in their approaches to overcoming or avoiding misunderstanding. This is not the same as saying that the groups acted identically or that there are no differences between them. Indeed, part of the discussion which follows examines the few areas which do seem to

distinguish the groups. However, the general picture of dyadic interaction is that cultural and language background do not constrain conversational repair.

Specific Group Differences

Some apparent group differences within specific tasks, however, are worth examining. As noted previously, a trend for overall group differences was found for clarification requests ($F = 5.172$, $df = 1$, $p = .0462$). Although the groups produced identical frequencies for this form of repair during discussion, and very similar frequencies during the back-to-back Lego task, members of the mixed dyads requested clarification much more frequently during the two tasks, taken together, which entailed setting objectives and teaching use of the laptop computer (COM1 and COM2), and to a lesser degree during the face-to-face problem-solving task (LEG2). More precisely, it was largely the learners in the dyads led by native speakers of English who requested clarification, and they tended to do so when they felt themselves the subjects of instruction. This rather limited area of group difference suggests that Japanese learners may feel somewhat freer to ask their American and British partners for help during instructional sessions--specifically, for their partners to clarify something not immediately understood--than to ask for similar help from their Japanese partners.

One additional trend towards group differences was associated with self-expansions during the face-to-face Lego

task. Members of mixed-group dyads were evidently much more willing to expand their own conversational utterances in order to clarify meaning than were members of the Japanese-led dyads (see Figure 12, above). Others have also noted the impact of ethnically mixed dyads on conversational performance (e.g., Long & Porter, 1985; Varonis & Gass, 1985). Because the task in which this kind of difference occurred allowed both participants to view the construction, it may be surmised that teachers in both groups were able to monitor the learner's progress accurately, but that the native teachers were readier than their Japanese counterparts to head off potential misunderstanding by increasing the redundancy of their utterances.

To put the issue of group differences in perspective, however, it should be pointed out that group differences did not prove statistically significant overall, as predicted by the null-hypothesis, and that the more important differences are based in the performance of tasks without regard to group membership. As noted in the following section, these differences were almost wholly task-based and typically emerged as repairs allocated to either teaching or non-teaching situations.

The Relationship of Repair and Task:

Allocation of Repair to

Teaching and Non-teaching tasks

The allocation of repairs to task (see Table 22) is the second major finding of the study. Repairs are not equally

useful during performance of various tasks, nor are they equally appropriate means of making the discourse more comprehensible. It is not enough simply to say that repair happens more often when members are cooperating to solve a motivating problem. Although this is generally true, it is more accurate to say, first, that particular repairs work best in particular environments and, second, that groups with different cultural and language backgrounds appear competent at knowing which repairs serve which tasks. This kind of competence is one of the more appealing features of studies in IT which have noted that NNSs can negotiate and repair effectively in their target language (see, especially, Porter, 1983; Doughty & Pica, 1986).

In addition to rejection of the null hypothesis for task, then, it is necessary to specify task/repair relationships: definitions, echoes and display questions to teaching tasks (COM1 and COM2); clarification requests, comprehension checks, confirmation checks, expressions of lexical uncertainty, referential questions, self-expansion and self-repetition to non-teaching tasks (DIS, LEG1 and LEG2).

Some explanation for this allocation of tasks is possible by positing what might be called "rules of talk" for each of the task groupings. Ordinarily, teaching situations require teachers to organize and sequence instructional content which they already possess as experts relative to the learner. The teacher is expected to

demonstrate a degree of precision in conveying the material, or at least to show special concern for the comprehensibility of the material with respect to the learner. Learners are expected to be attentive to what the teacher presents and to demonstrate this attentiveness in various ways, although, especially in Japan, learners are not normally responsible for initiating communication on the comprehensibility of the instructional presentation.

Competent performance on non-teaching tasks is somewhat more dependent on participants' requesting and offering evidence of comprehensibility than on planning or attentiveness per se. Problem-solving tasks, in particular, revolve around mutual exchange of information and frequent checks to determine the present status of the problem with respect to a solution. Planning and execution of tactical moves occur within the task itself and depend on the quality of feedback participants generate for each other from moment to moment. In general, members' rights to manipulate the discourse are distributed relatively evenly (as Pica, 1987 has also noted) although they are not necessarily exercised when openings for such manipulation become available.

Examples of Allocation to Teaching Tasks: Definition and Echo.

Given these characterizations, the allocation of definitions and echoes to the teaching tasks makes some sense. Definition happens when speakers are concerned with the nature of an object and the importance of communicating

it to a listener. This is fundamentally a concern with knowledge of concepts rather than, or, perhaps in addition to, information of immediate use in the solution of a problem. Echoes unambiguously demonstrate learner attentiveness to the stream of teaching talk. Echoes appear to have much less to do with evincing comprehension of the teacher than with reassuring the teacher that the listener is aware of a topic as it is conveyed. One of the learner's major responsibilities during cooperative problem-solving, on the other hand, is to volunteer frequent evidence of understanding or to request enough information to provide such evidence. This is precisely what occurred during the Lego tasks. Ordinary discussion, as a form of social discourse, moreover, is clearly and frequently punctuated by evidence of attentiveness (typically in the form of inarticulate "mm's"), although there seems to be no pressing need to expressly and continually re-nominate the speaker's topics--something which learners in both groups accomplished significantly more frequently in COM1 and COM2 than in any of the other tasks. Support for this way of interpreting echoic behavior is found in Gass and Varonis (1986) who also found that echoing evinces solidarity with an interlocutor.

Allocation of Question Types to Teaching and Non-teaching Tasks: Display and Referential Questions.

Interestingly, the "pivotal" forms of repair in each of the two task categories (repairs with the largest F ratios

and smallest alpha levels) are the two basic question types--display and referential questions. Recalling the literature reviewed earlier (in particular Long & Sato, 1983; Duff, 1986), display questions are quintessentially the technique of teachers and others determined to test knowledge, simplify putatively complex instructional material and point out salient features in a presumably confusing field. Although the asking of display questions can qualify as repair behavior in nearly any setting, the high frequency of display questions in teaching situations (relative to other situations) suggests that they are a fundamental and recognizably appropriate class of behavior for anyone engaged in a teaching task.

Referential questions are on the other side of the equation. The referential question is fundamentally part of non-teaching situations, particularly those which allow freedom to structure the discourse content (as in DIS) and make language the servant of the participants, as is the case in tasks requiring the cooperative exchange of information for successful completion (LEG1 and LEG2). Participants who know, as teachers, for example, that display questions are appropriate forms of behavior when knowledge is to be taught, know equally well that referential questions are appropriate ways to initiate repair when information is to be exchanged.

It appears, then, that task is a kind of frame for repair in which conversational roles and responsibilities

can and do shift depending on the task. Pica's (1987) observation about the nature of the task influencing the production of modified interaction is of some explanatory value here. Given the requirement of a more-or-less equal exchange of information, even the normally dominant position of the teacher can be altered to permit greater negotiation with a learner during task-based talk. This position helps to explain why ordinary discussion, which clearly does not control for either one-way or two-way exchange of information, was most frequently the setting for expressions of lexical uncertainty and referential questions, and why teachers in both groups reduced their talk to accommodate unaccustomedly voluble learners and thus to help bring the relative contribution of both partners into balance.

When cooperation was imposed by the demands of the task, as was the case in both Lego tasks, somewhat different repairs, those involving constant checks of comprehension or clarification of vital information, for example, predominated. Whereas free discussion permits participants who have accepted reasonably equal statuses (if only temporarily) to pass up unclear material without comment, information-gap tasks undertaken by participants of equal status require moment-to-moment monitoring and repair of the discourse in order to keep it on track. It may be recalled that similar findings were reported in Pica (1987) who pointed to the the "equalizing nature of an information exchange task" (p. 16).

Allocation of repair to tasks can, of course, be elaborated beyond the fairly simple division between teaching and non-teaching tasks. For example, the results also suggest that one non-teaching task, discussion, is particularly associated with expressions of lexical uncertainty and more or less equal use of referential questions by both teachers and learners.

There also appears to be a distinction between LEG1 and LEG2--between a two-way task and a one-way task--so that comprehension checks are, given the data gathered in this study, characteristically associated with the two-way task, whereas confirmation checks are characteristically associated with the one-way task. This particular distinction gains some explanatory force from the nature of the tasks: When participants are working towards a solution, sitting back-to-back, the participant who supplies directions has a special stake in knowing immediately if the directions were understood. A confirmation check, on the other hand, is a listener's relatively confident response (as opposed to a clarification request) to a direction offered by a speaker who can, like the listener, unambiguously observe the effect of the direction.

Whatever the explanatory quality of these ways of looking at the results, they remain minor streams in comparison with the primary distinction between tasks which are conducted through teaching and tasks which are carried out through negotiation. Considering the potential

applications of this research to second and foreign language instructional methodology, it may seem odd to suggest that non-instructional tasks could play a useful role in the design of instruction. However, the results do indicate that teachers' participation in tasks which reflect normal small group conversational processes produces significantly different forms of repair than tasks which reflect small group instructional processes. A related finding is reported in Pica and Long's (1986) study which compared instructional and non-instructional discourse. While both conversational and instructional processes may be useful to learning a second or foreign language, the bulk of evidence reported in the literature (see Pica & Long, 1986) supports the view taken here, namely that the kind of talk involved in teacher-led conversational and problem-solving tasks more frequently produces negotiation and repair believed to be of value in acquiring an additional language than the kind of talk which typifies teacher-led instructional tasks.

The Use of Reference by Group and Task

Anaphora and exophora were found to differ by task, contrary to the null hypothesis, but not by group. In these respects, reference and repair share a general level of similarity.

Beyond this general level, however, reference has its own pattern of association with task. It should be recalled from the results that anaphora and exophora are typically mixed within the same task. It is the relative distribution

of these two forms of repair within and between tasks, however, which suggests a distinction between tasks emphasizing the existence of shared experience (including perception of the speech situation) and those emphasizing the need to build shared experience through language in order to accomplish the goals of the task. The need to create a set of shared experiences and perceptions is an underlying feature of COM1, DIS and LEG1, so it was not surprising to find that anaphora, a form of endophoric reference which helps to link prior with current elements of the discourse, was a great deal more frequent than exophora. Tasks in which shared perception predominated (COM2 and LEG2) showed a rough equivalence of frequencies for anaphora and exophora (see Figure 14, above). Thus, while anaphora appears to be a ubiquitous feature of task-based talk in general, the relative frequencies of anaphora and exophora change in response to the experiential level of a given task. Exophora appears to serve as the experiential barometer in spoken texts, indicating how extensively participants are able to presume on each other's understanding of the speech situation.

This characterization of reference in task is quite different from the one presented here previously with respect to repair--i.e., teaching/non-teaching--but does accord with the way Gaies (1983), Gass and Varonis (1985a) and Wagner (1983) have discussed their studies of task-based discourse. The point of departure with previous studies,

however, is the focus on how textual cohesion is achieved in tasks which emphasize various levels of shared experience and not specifically on how meanings are negotiated.

Given this focus, it may be possible to add some empirical refinement to the speculations about the role of "experience" reported in the literature. Participants' shared experience of a culture, of knowledge of the world and of the particular conversational setting in which they find themselves eventually find expression in textual reference. While it is possible, of course, to argue that sharing of assumptions increases negotiation in general (see, in particular, Gass & Varonis, 1985a) it is perhaps more accurate to say that shared experience simply increases reference to the here-and-now (through exophora). At a certain point participants' common experience renders negotiation superfluous, so it is not universally the case that talk will be negotiated when interlocutors have almost everything in common. It is possible to observe this more complex relationship among task, negotiation and experience when the tasks to be studied range beyond the one-way/two-way distinction, as is the case here, when it was found, for example, that more exophoric reference (but less definition) occurred during COM1 than during either the one-way or two-way problem-solving tasks (LEG2 and LEG1, respectively).

Specific Allocations of Reference to Task

The balance between anaphora and exophora during task-based discourse appears very much influenced by the kind of

task in which participants find themselves (Table 25). Anaphora occurred significantly more frequently during LEG1 (a two-way information exchange task which limited the ability of participants to share perception of the task materials) than during COM2 (the face-to-face demonstration of the computer's string search function). Exophora occurred significantly more frequently during the two tasks which allowed participants to observe, examine and manipulate the objects of their discussion (COM2 and LEG2) than during all of the remaining tasks, including ordinary discussion.

These results suggest the emergence of an experiential factor which depends in large part on the sharing of experience and perception between the two participants. Without such sharing, without the tangibility and direct experience of task processes, tasks become much more dependent on the cohesive function of anaphora to make them intelligible. With tangibility and direct experience built into task processes, participants use exophora to point out the essential features of the task environment; negotiation of the talk in some of these tasks may well contribute to their comprehensibility, although negotiation is apparently not the only resource participants employ to improve the comprehensibility of their talk.

Thus, an additional major finding of this study relates to understanding the five tasks in terms of textual qualities and the relation of these to an educational

perspective on language use. Based on results reported earlier, it is now possible to think of tasks as having experiential or expository characteristics based on the relative contributions of anaphora and exophora to the spoken texts. The empirical dimensions of this perspective have only been suggested, however, and then only with respect to two exponents (anaphora and exophora) of a theory of reference. The remainder of this chapter will be devoted first to an examination of repair and then to a further examination of reference occurring in the limited group of tasks found to be most closely associated with exophoric reference (LEG2 and COM2) in comparison with COM1, the lecture-like task which best embodies expository behavior.

Repair During Combined and Selected Tasks:

Towards a Framework for Complementary Task Structures

When tasks are combined or selected to reflect the reference-based concept of experiential and expository tasks, the number of significant results dwindles and one result in particular, the result for clarification requests, shows significant group differences. It should be recalled that when the five tasks were treated as repeated measures, the mixed and homogeneous groups tended to differ on the basis of clarification requests, a trend which reached significance when clarification requests occurring in the expository task were compared with those occurring in both forms of the experiential task (i.e., EXPOS-EXPER1 and EXPOS-EXPER2). Since clarification requests are largely

based on the contributions of Japanese learners in both groups, the significantly larger number of such requests in the mixed group suggests greater conversational activity among learners when a native speaker is available for feedback. One possible way of looking at this effect for group is to consider the learner's perception of the native speaker as more open to a clarification request than a Japanese teacher would be--more willing to respond usefully or informatively to the request. Since this perception cannot be measured directly, it should be helpful to examine the transcripts in order to compare the actual responses of the teachers. Qualitative differences in the responsiveness of teachers from the two groups can be inspected directly and reported. For the time being it is interesting to note that when the quantitative analysis is focused on differences between the experiential and expository tasks, a single, significant group difference emerges.

Beyond this difference between the groups, the experiential-expository contrast also severely limits the scope of significant differences while, at the same time, repeating the rather clear allocation of repair to a bifurcated task structure.

The smaller number of significant repair exponents, the appearance of a group difference for clarification requests and the interaction between group and task for self-repetition, have fairly straightforward explanations. The experiential-expository contrasts were made through the

elimination of other tasks. Because of the nearly identical results obtained for both EXPER-EXPOS1 and EXPER-EXPOS2, it appears that the tasks eliminated from the analyses of variance (first DIS and LEG1, and then DIS, LEG1 and COM2) were the main sources of variance for comprehension checks, display questions, echoes and self-expansions--none of which attained significant group or task differences. Put in somewhat different terms, DIS, LEG1 and COM2 served to suppress group differences for clarification requests and interaction between group and task for self-repetition. Once these tasks were removed from the analysis, the non-significant trends for clarification requests and self-repetition which developed during the initial, five-task repeated measures ANOVA developed into, respectively, a significant group difference and a significant interaction.

REs which retained their significant levels of difference for task in the experiential-expository contrasts (confirmation checks, definitions, expressions of lexical uncertainty and referential questions) can be viewed as strategic behaviors of use in two different, although complementary, task structures. Where Table 22 indicates that confirmation checks and referential questions are allocated to non-teaching tasks and that definitions and indications of lexical uncertainty are allocated to teaching tasks, Table 26 shows that these tasks also fall, respectively, within the experiential and expository task structures. These results reinforce the suggestion made

earlier that teaching and expository behavior overlap--that non-teaching (or conventionally negotiated) and experiential activity overlap, and thus that some forms of repair at least can be expected to appear in what may be termed complementary task structures. Although there is clearly no identity between teaching and expository tasks on the one hand and non-teaching or experiential tasks on the other, it does seem possible to draw a rough approximation of how a limited number of REs fall within the complementary task structures, as follows:

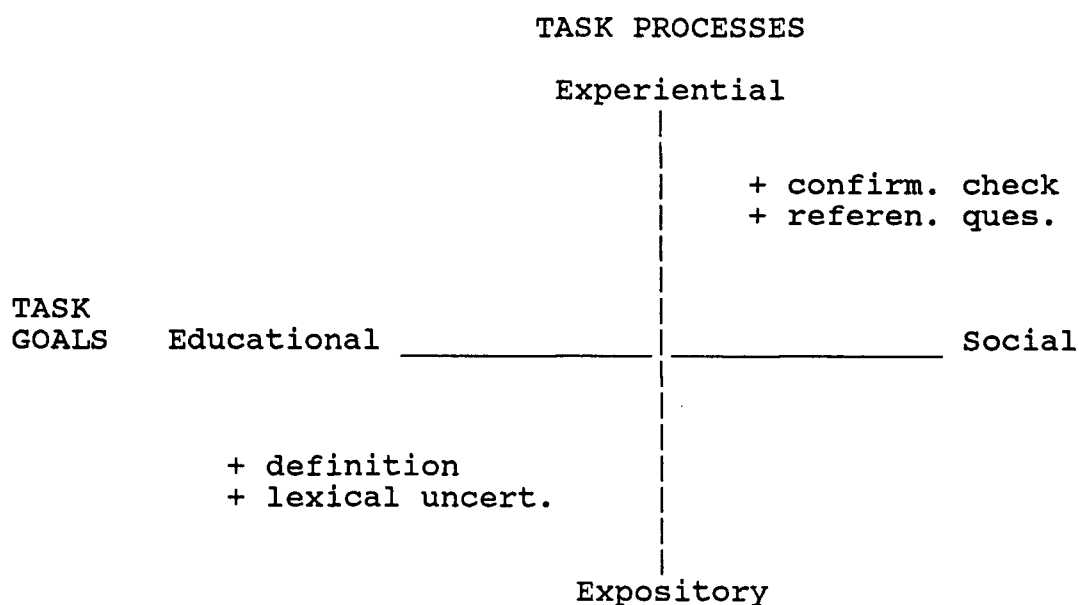


Figure 18. Allocation of four repair exponents to complementary task structures.

Extending the research design somewhat in order to accommodate the results, Figure 18 emphasizes the goal and process of talk in various contexts. It thus broadens

the notion of task to an explicit concern with the reasons people have for talking with each other and the ways by which they accomplish their goals through language. This framework for tasks appears more complex than the one-dimensional versions of use in empirical research, although it is intended to reflect more of the world in which conversational exchanges actually occur. Recalling the discussion of dimensions of task and interlanguage talk in Chapter 2, fairly straightforward comparisons can be made between the two-dimensional framework outlined here and others reported in the literature: Long (1980) and Gass and Varonis (1985a) with regard to the one-way/two-way task distinction, Duff (1986) on convergent and divergent tasks, Doughty and Pica (1986) and Pica (1987) on required vs. optional information exchange tasks, and Pica (1987) on information exchange vs. decision-making tasks.

Figure 18 should be interpreted broadly. Since the goals and processes of social talk in ordinary circumstances can shift over time, it may be more useful to view the figure as a kind of snapshot taken during one phase of a social interaction. From this point of view, a task constitutes the frame in which instructional planners and researchers may decide to organize talk and thus to capture something of the complexity of communicative behavior.

The unfilled quadrants in the figure suggest additional slots for REs under task conditions which were not encountered in this study. In principle, for example, a

non-teaching task with expository characteristics--the exchange of anecdotes or report of a trip abroad, for example--could produce a distinctive distillation of REs given opportunities for interaction by the participants. Implications for this way of looking at complementary task structures will be explored again in Chapter 7. For the present, it is perhaps sufficient to indicate that particular sets of repair behavior may be expected to occur given the intersection of task factors and that tasks may be evaluated for their orientation to goal as well as process.

Reference During Combined and Selected Tasks

This last section re-examines reference from the viewpoint of an experiential-expository contrast. Before discussing the results for reference individually, some general points will be raised which apply to both forms of reference.

First, it may be recalled that the groups were separated by a large, if not significant, gap in the use of both forms of repair during COM1, the expository task. The homogeneous (Japanese-led) group of dyads employed anaphora demonstrably more often during this task than the mixed (native speaker-led) group (see Figure 16). Just the reverse obtained for exophoric reference: The mixed group preferred exophoric reference over the homogeneous group (Figure 17). These results reinforce the impression reported earlier that exophora and anaphora are essentially complementary in spoken texts, especially so when a range of

speech contexts can be examined for the relative distributions. The results also suggest that different groups can perceive the same context, or task, in different ways, as indicated by their preference for a given form of reference. The point should not be overstressed, however, particularly since the group differences across both sets of tasks indicated only a trend in the direction of group differences.

Anaphora During Experiential and Expository Tasks

Rejection of the null hypothesis that anaphora is unrelated to task, in addition to the finding that anaphora did not occur more frequently during expository tasks than during experiential tasks, require some explanation. Anaphora appears to be a ubiquitous feature of task-based talk. Even though significantly more anaphora was found in LEG1 (nominally, a non-teaching task with expository characteristics) than in COM2 (a teaching task with experiential characteristics), anaphora was also found at nearly equivalent levels during the three remaining tasks. When tasks were specifically limited to experiential-expository comparisons, anaphora was found to be even more frequent during the experiential task. Thus, anaphora cannot alone be expected to serve as the textual signature for teaching and exposition, a conclusion clearly at odds with the view of anaphoric reference presented in Chapter 2.

This point is worth restating with reference to the Cummins' conceptual framework (1983). Although anaphora

demonstrably serves to link elements in a text, it does not thus automatically work as evidence of the cognitive complexity or level of contextual support in the text. Other factors must be implicated in such useful concepts as cognitive complexity and contextual support, and it is here that another finding of the study can be restated to incorporate these concepts: It is the balance between anaphora and exophora which provides some evidence for the degree to which participants treat their talk as more or less complex, as offering more or less contextual support.

Exophora During Experiential and Expository Tasks

Exophoric reference is clearly the more active factor in the anaphora-exophora balance. Exophoric reference occurred significantly more frequently during the experiential tasks than during the expository tasks (in which it was virtually absent). Regardless of the number of tasks used in the analysis--five or two--and regardless of group membership, the two nominally experiential tasks consistently influenced the speakers to produce a high and sustained level of exophoric reference. The position of exophoric reference in the experiential tasks clearly accords with Halliday and Hasan's (1976) view of its function in spoken and written texts and supports Mohan's (1986) view that experiential activity plays a key role in communicating practical knowledge.

This strong relationship between certain kinds of tasks and exophora suggests something of the transparency and

immediacy of experiential tasks. Even though experiential tasks are not uniformly the source of frequent negotiation and repair, and allow participants to achieve clarity of meaning at least as much through shared perception as negotiation, experiential tasks elevate the comprehensibility of things and events in the situation to a position of tactical importance. Comprehensibility can be an outcome of negotiation as well as a common understanding of the situation in which participants find themselves. It is the experiential task, in particular the non-teaching experiential task, which seems to have emerged as a kind of compromise between tasks which prohibit negotiation and those which enforce it.

Summary

Several interpretations of the results have been highlighted in this chapter. First, the general lack of group differences suggests that Japanese teachers of English are not working under a strategic handicap in comparison with their native English speaking counterparts. Teachers in both groups were equally competent in recognizing and responding to the learners' calls for assistance. The results further suggest that the ability to repair talk in a foreign language may become a conversational resource of learners at a relatively early stage in their acquisition of the foreign language. Both groups of intermediate level learners in this study, for example, used their interlocutors with equal competence to clarify information,

confirm understanding and otherwise ask questions to elicit new information.

Second, the major differences in the frequency of repair are found in qualitatively distinct tasks. Different kinds of repair are allocated to different tasks, the basic division lying between teaching and non-teaching tasks. Whereas teaching tasks are associated with relatively passive or formulaic behavior, such as echoing and asking display questions, non-teaching tasks seem to generate a wider range of repairs and negotiation of meaning between the participants. The negotiation is characterized by frequent contributions from learners and a sharing of responsibility for giving and getting information by both members of the teacher-learner group.

Third, just as repair is distinguished by and allocated to task, reference is distributed to task in a distinctive way, anaphora to tasks emphasizing the need to build links across the discourse through language and exophora to tasks emphasizing the existence of shared perceptions of the speech situation. Although anaphoric reference was freely used in all of the tasks, exophoric reference was found largely in tasks in which participants shared perception and experience. The notion of an experiential task was developed to encompass these properties of tangibility and direct experience in the task discourse, and contrasted with the concept of an expository task in which one participant is mainly responsible for conveying information and keeping

parts of the discourse intact. When tasks are viewed in this contrastive way, the allocation of repair to task narrows considerably, but at the same time reinforces the impression that experience and exposition are fundamentally different approaches to accomplishing tasks through language.

A fourth, and related, issue concerns the inter-relationship of the two sets of task structures, teaching and non-teaching, experiential and expository. Based on the overlap of repair within these two sets, it is possible to envision a complementary task structure which very clearly distinguishes a very few repair behaviors. The intersection of teaching and expository behavior during tasks provides perhaps the most conservative discourse environment, so it is not surprising that definitions and expressions of lexical uncertainty typify this point of intersection. When non-teaching and experiential tasks are taken together, it is perhaps also not surprising that confirmation checks and referential questions predominate--just the sort of behavior which might be expected during cooperative discourse outside of most classrooms.

The potential value of this way of looking at task structures, however, may lie in the fact that teachers and other planners have a choice in the way they structure instruction, choosing groups and tasks to assist second and foreign language learning. Participation by teachers in small group tasks per se neither inhibits nor encourages negotiation and repair of the group's talk. What does seem

to matter is the kind of task employed, the experiential qualities of the task and the degree to which language is used to accomplish educational purposes.

CHAPTER 6:

QUALITATIVE ANALYSIS OF THE TASK TRANSCRIPTS

Unlike the previous two chapters, this chapter is an analysis of the transcripts themselves; the data are thus expressed directly in the words of the participants.

Although the coding scheme has been retained for descriptive purposes, it is not the frequency of coded behavior which is of interest here but rather the ways in which participants accomplish repair and reference through discourse.

Two topics have been selected for examination: distinguishing between display and referential questions and outlining the characteristics of repair occurring in what has been referred to in the previous chapter as complementary task structures, namely the confluence of expository behavior in teaching tasks and experiential activity in non-teaching tasks. Both topics have been broached in the quantitative analysis. Their further, qualitative treatment here is intended to reinforce findings reached earlier with examples from the spoken texts, to shift the focus of analysis from statistical averages to specific cases and thereby to assist second and foreign language teaching professionals to recognize key forms of repair in context.

Beyond providing specific cases of individual REs in context, however, the qualitative analysis will attempt to relate the complementary task structures outlined in Chapter

5 to repair processes in selected transcripts. Thus, co-occurring sets of REs will be examined at a level of reality which could not otherwise be achieved through quantitative methods. Finally, it should be stressed that the analysis of variance reported in Chapter 4 has provided a list of REs for the qualitative analysis which are clearly allocated to particular tasks in Table 22. This means that directions for the textual analysis to follow are provided by statistical reasoning rather than by an observer's preliminary induction of salient categories.

Before beginning the analysis, it should also be pointed out that interpretations of how various forms of repair are accomplished through discourse are always subject to alternative explanations. Although interpretation of the conversational data obtained in this study requires some understanding of the cultural and social background of the participants, that is, a level of understanding beyond what might be called a common-sense explication of a talk between two people, it would still be unreasonable to claim that other perceptions cannot be applied at least as artfully, if not as validly, to the data. This aspect of qualitative analysis is briefly reviewed in the following chapter during discussion about the generalizability of conclusions achieved through textual analysis.

Display and Referential Questions

The distinction between display and referential questions was one of the clearest achieved during the

analysis of variance. How does this distinction appear in the transcripts and under what circumstances is one form of question preferred over the other? One way of dealing with these issues is to examine those transcripts in which the highest average frequencies were recorded for each of the question types, that is, transcripts for COM2 (display questions) on the one hand and DIS and LEG2 (referential questions) on the other.

COM2: The Instructional Demonstration Task

It may be convenient to recall that COM2 entailed the teaching of how the string search function on a laptop portable computer operates. An important characteristic of the task was the presentation of information about the function with the computer actually available for inspection and manipulation. This sort of expository presentation of information is a fairly common instructional procedure; indeed it may represent the most salient popular image of what teaching and learning are all about. It may not be surprising, then, to find that the learner's behavior during the such a procedure is largely passive and directed by the teacher. Display questions are thus consistent with the teacher's role as the source of knowledge and responsibility for examining the learner's understanding, i.e., for having the learner display understanding.

Based on an examination of COM2 transcripts, there seem to be many forms of display question, however, each of which serves a function appropriate to communication in a teacher-

directed instructional environment. A frequent activity in this sort of environment, of course, is the teacher getting a demonstration of information which is supposed to have been passed to the learner during a period of instruction. The most typical sort of question during COM2 was, in fact, specifically intended by the teacher to display the learner's understanding, as the following two examples illustrate (transcript reference in square brackets, teacher in capital letters, learner in lower case, display questions underlined):

- (1) THAT'S RIGHT. - NOW - UH - PRESS THE BUTTON. DO
/Hm
YOU REMEMBER THE NAME OF THE - KEY - THAT WE HAVE TO
PRESS - TO FIN---

Ah, F-1.

CAN YOU FIND F-1?

F-1. Ah-hah!

[2COM2]

- (2) CAN YOU PUSH - PUSH THE ARROW? WHAT HAPPENS WHEN
YOU PUSH THE ARROW?

Uh, I must find it?

OKAY. NOW WHAT DID YOU TYPE? ++ WHAT DID YOU TYPE
JUST NOW?

"The".

OKAY. WHA, WHY - WHY DID YOU TYPE "THE"?

I must find out the - theory. The - first of.

OKAY, WELL, IT ISN'T THAT YOU'RE LOOKING, YOU'RE
REALLY NOT LOOKING FOR THE WORD, "THEORY". YOU'RE
LOOKING FOR THE WORD "THE".

[4COM2]

As both examples illustrate, it is not enough for the learner to merely push the the right key, although doing so is clearly a partial demonstration of understanding. What seems to be even more important, however, is that the learner verbalize the action or even justify it. Part of what constitutes successful work on this kind of task is action, but part is explication or (as in other parts of the transcript) summary of a series of procedures.

Very little of what the teacher is asking the learner to say is likely to be said during what might be considered more ordinary conversational activities. Conversational partners do not ordinarily query each other about the obvious or about things which are already known to the questioner. But it is precisely the obvious and already-known which serves as the center of talk in situations devoted to instruction of subject matter, particularly those, such as COM2, which offer a motivating context for talk about the already-known. It appears, then, that learners' opportunities to use language are constrained by the teacher's perception of how well a learner articulates understanding of instructional content. Issues beyond content, such as the mutual intelligibility of the discourse and information exchange, are relatively unimportant sources of conversational activity.

A secondary function of teacher-learner talk which emerged during inspection of the COM2 transcripts was verbal pointing-out, focusing on something the teacher considered

useful for moving smoothly through the instructional procedure. The "display" qualities of pointing-out can be observed in the following examples:

(3) OKAY, UH, CAN YOU FIND THE - BUTTON SAYING "SHIFT"?

Yes, I can.

/OKAY, OH, PLEASE - DO NOT PRESS THAT SHIFT.

[6COM2]

(4) OKAY. NOW IT'S IDENTIFIED. YOU SEE WHERE THE CURSOR IS THERE? ++ SEE IT BLINKING?

+ Blink.

THERE, YOU SEE IT BLINK?

Yeah, the - first, the firs, this one? Kore?

/CURSOR

RIGHT, OKAY. DON'T TOUCH THAT, THOUGH. OKAY. + NOW, IT'S FOUND THE FIRST LETTER, "A".

[7COM2]

The teacher has temporarily stopped the action and brought the learner to the point of an important instruction. The teacher clearly has a motive beyond confirming a common perception of the situation. Here the teacher breaks the instruction into two components, one which establishes a specific topic (the shift button, the blinking cursor) and another which directs behavior ("do not press that", "do not touch that"). This approach to instruction resembles such forms of language simplification as topicalization (Hatch, 1983) and decomposition of lengthy propositions (Long, 1980). However, it is perhaps easier to interpret the pointing-out

questions in (3) and (4) above as the teacher's attempt to operationalize accuracy and sequence--values likely to be promoted in any formal instructional setting. Questions which are intended to rivet the learner's attention, then, seem not so much oriented toward clarification of meaning as setting up the conditions for conveying procedural information efficiently.

Questions which set up key behavior are closely related to questions which immediately direct performance but which take the form of a polite suggestion:

- (5) YOU WANT TO MOVE THE CURSOR AROUND A LITTLE BIT TO SEE WHAT IT DOES?

Yes.

YEAH. SO IT JUST GOES SPACE BY SPACE IN THIS CASE.

[12COM2]

- (6) YEAH, CAN YOU MOVE THAT? ++ J- CAN YOU JUST TRY, PLAY WITH IT? + YEAH, UP AND DOWN OR LEFT, - RIGHT - ALL RIGHT. NOT THE TOP, YEAH, DOWN. OKAY.
/Ah not /Top? - Right, left.

[9COM2]

- (7) OKAY. CAN YOU PUSH "A"? ++ RIGHT.

Yes.

[4COM2]

(8) AND. HOW ABOUT TRYING AGAIN? SEE HOW MANY- WE'LL SEE HOW MANY WE HAVE.

(4) How ma + Ha How many
/MAYBE YOU CAN PUSH F-2 AGAIN. WE'LL SEE
HOW MANY WE HAVE HERE. THERE'S ANOTHER ONE.

Aaah.

WHY DON'T YOU KEEP PUSHING UNTIL YOU GET TO THE END?
KEEP PUSHING F-2.

[3COM2]

A strategy which emphasized language simplification would not normally employ the kinds of polite suggestions cited in (5-8), above. As the examples indicate, polite suggestions are typically much less direct than simple imperative forms ("Move the cursor around . . .") and thus employ more complex syntax. This property of such requests indicates that comprehensibility (as might be achieved through simplification of the syntax) is not nearly as important as the teacher's manipulation of the learner's behavior in aid of moving through the lesson content. Clearly the teacher is not deaf to the learner's request for help in (8), since the teacher repeats and expands on the initial justification for "trying again". The disingenuous quality of the question, however, puts it squarely into the display category and the overall impression is that the teacher is exercising a register expressly employed for training situations--a kind of teacher talk. Similar registers can be imagined for a number of other settings, such as asylums and hospitals, in which relationships are characterized by dependence and relative incompetence on the part of one of

the interlocutors.

A variation on the use of questions as directives is a kind of prompt or reminder in which the teacher asks a question and then proceeds to supply part of the answer. Once again an impression of the learner's relative ignorance and dependence is conveyed by the prompting form of display question:

(9) WHAT'S THE SPELLING OF "TOGETHER"? T-O-G-E- -

t-h-e-r.

T-H-E-R. AND YOU WANT TO FIND A WORD?

t-h-e.

T-H-E. THEREFORE, THIS - CURSOR IS SHOWING.

[10COM2]

Since this form of the question is designed to produce a response from the learner, it thus might seem to function as a check of the learner's ability to spell. Because the question seems so naive, however, because the response which the teacher wants to produce is virtually assured even as the question is posed, an alternative motive may be at work. As it turns out, the distinction between T-H-E produced with leading and following spaces, and without them, is crucial to the computer's ability to locate a string accurately; spaces are important in string searching. The teacher apparently wanted to test the learner's understanding of this quality of string searching even though the instruction might seem to be caught up with a spelling problem. This

bit of talk has helped to explain why the cursor didn't find the, the word, and so it was probably worth the teacher's investment in having the learner focus on a relatively simple, known piece of information in order to make an important inference.

A general feature of this kind of instructional discourse, then, may well be the teacher's use of display questions to lead the learner ever-so-mincingly to the point of an inescapable conclusion which had not previously been made explicit. The transcripts show numerous long patches of dialogue in which the teacher has the learner move gradually towards an inescapable conclusion. The teacher's tolerance for engaging in this level of somewhat tedious discourse may, in fact, run out at times, even though a piece of information may still be worth bringing into the discussion. In such cases the teacher may find it more efficient to simply ask the question and then supply the whole answer without ever really intending that the learner respond. The following examples illustrate this pre-emptive approach:

- (10) WHEN WE WERE GOING THROUGH, I SHOULD HAVE STOPPED YOU AT TWO POINTS. WE HAD THE WORD "THEORY", T-H-E-O-R - I-E-S. WHY DID IT STOP AT THE WORD "THEORY"? BECAUSE WE TYPED IN T-H-E, BUT WE DIDN'T LEAVE A SPACE IN
/Hnn
FRONT OR A SPACE IN BACK...

[4COM2]

- (11) YES, AND WHAT HAPPENS? WE'VE COME UP TO ANOTHER + ANOTHER VERSION, ANOTHER USE OF THE WORD "NEEDS". THAT'S TWO TIMES.

[5COM2]

- (12) OKAY. + SO, WHAT HAVE YOU GOT? NOW- THERE ARE - FIVE THINGS AT THE, UH, BOTTOM OF THE SCREEN, RIGHT?

[9COM2]

The pre-empting question effectively turns dialogue into monologue, if only temporarily, and reduces the opportunities for negotiation. It is, however, a fairly familiar instructional resource which the teacher may find of value even when the learner may be prepared to attempt a response.

This small group of display question types by no means exhausts the variety of display questions found throughout the 12 transcripts. It does, however, account for the great majority of display questions found in the fairly traditional instructional context represented by COM2. When the setting changes radically from one which is largely oriented to serving educational aims to ones which revolve around information exchange or problem-solving, a very different kind of question predominates.

DIS and LEG2: Discussion and Cooperative Problem-solving

DIS had the fewest formal constraints of any task. This is not to say, of course, that discussion which has been given no explicit objectives is without very powerful controls on structure and development. The term "free discussion" is reserved for the discussion task, however,

largely to indicate that the participants and not the researcher were responsible for the content and direction of the talk. By contrast the content and direction of LEG2 was very much influenced by the initial instructions to the participants to build the model together and by the materials of the model itself, including the graphic instructions which required each piece to be placed in a particular way. This task is characterized by its focus on cooperatively constructing a model which can be viewed by both participants. It is thus perhaps more accurate (although less consistent) to speak of the dyad as consisting of an "information provider" and an "information consumer" rather than of a teacher and a learner. Compared to tasks with purely instructional purposes, DIS and LEG2 reduced the importance of the status gap between teacher and learner and required an active exchange of information.

Taken together, the discussion, face-to-face Lego and, to a smaller degree, back-to-back Lego tasks provide a clear contrast to both of the teaching tasks in terms of the occurrence of referential questions. Referential questions have great currency when participants are prepared to supply information which is known (or at least believed) to be of interest to a conversation partner. The following examples suggest a range of functions for referential questions in discussion and problem-solving settings. Most of the excerpts have been taken from the discussion transcripts (the greatest number and variety of referential questions

occurred during free discussion) although problem-solving of the sort enforced during performance of the face-to-face Lego task produced a small and interesting set of referential questions which did not occur during discussion. This set will be examined briefly following examination of the discussion transcripts.

DIS: Free Discussion

Within the broad range of questions classified as "referential" which occurred during discussion, the most common question is a response to the previous speaker's extension of the current topic. Responsiveness here means acknowledgement of the previous speaker's utterance and encouragement to expand on it. The responsive question ordinarily aims at eliciting fresh conversational material, although it may well be the case that the material itself is of less importance than the fact of conversation being extended cooperatively.

(13) YEAH. I LIKED KOCHI AND I WAS A LITTLE BIT -
SURPRISED.

Ah! On what point?

WELL, BEFORE I WENT TO SHIKOKU, I TOLD SOME OF MY
FRIENDS THAT I WAS GOING TO SHIKOKU. AND THEY SAID,
"SHIKOKU! AH!" IT'S REALLY IN THE STICKS. IT'S - UH
- THERE ARE ONLY FARMERS.

[2DIS]

There is no externally imposed goal or direction for the conversation although the participants do seem to share an interest in drawing each other out. This increases the

chances that turns will be linked to a topic or that candidate topics can be examined for inclusion in the conversation. Allowing a speaker to elaborate on the speaker's topic of interest is typically the initial effect of a responsive question; the eventual effect of such generosity, however, is to seed the conversation with points which can be taken up by a listener.

(14) YEAH. + AND + WELL, MY HOMETOWN IS QUITE NEAR.

Where?

UH, SANDA.

Sanda?

HAVE YOU HEARD OF SANDA?

No.

IT'S IN THE MIDDLE OF, UH, HYOGO - PREFECTURE.

[9DIS]

The alternation of referential questions from one participant to the other as exemplified in (14) is the basis of information exchange about a topic which is so characteristic of the discussion task. Depending on the level of proficiency, such responsive questions may be a learner's major contribution towards development of a topic and a useful means of getting more out of the conversation than is put into it.

Frequently, however, responsive questions do not produce balanced exchanges of information but instead serve either to tease out a topic piece by piece or to raise

candidate topics for acceptance or rejection by the next speaker. Such cases typically produce relatively long responsive strings with one member of the dyad asking and the other member answering questions.

(15) FUNA?

Funa. Yes + umm ++ that is one ++ um - that is a kind of + goldfish.

UH HUH.

Oh.

AND YOU CAUGHT THAT IN THE POND?

Um yes. It is typical Japanese fish which is in river ++ river or pond.

AND THEN YOU, YOU, DID YOU YOU TAKE THAT HOME AND EAT IT THEN?

Ha ha so ha ha ohhh no fe umm so few people eat it but almost doesn't eat.

AH, SO YOU THROW IT BACK?

Yeah.

YOU CATCH IT AND THEN THROW IT BACK IN?

Yeah.

WHEN YOU CAME TO FISH IN THE OCEAN, WAS THAT DIFFERENT?

[3DIS]

This way of constructing a topic clearly puts a burden on the teacher, the more proficient member of the dyad, but it also makes it easier for the learner to exercise some responsibility for directing the talk. The teacher's questions are largely responsive to the learner, even though

the level of question simplification is not especially responsive to the learner's demonstrated ability to handle unsimplified yes/no questions.

An even greater conversational burden is taken on when topics are thrown out for consideration by the listener. This additional general category of referential questions--referential questions which help to bring new material into the conversation--lends a degree of unpredictability to the conversation and enriches it with opportunities for participants to insinuate personally interesting material into the ongoing talk. Sometimes the topic is pursued immediately; sometimes, however, topics must be raised one after the other until one is found to be worth blending into the conversation. This method of examining prospective topics is illustrated in (16), below.

- (16) UH HUH. (2) MMM. DO YOU HAVE ANY UH (2) CLUB, CLUB ACTIVITIES CONNECTED WITH OTHER UH ++ THE ESS, UH ESS OF OTHER UNIVERSITIES?

Mmm. Yes we have. So called K-I- K-I-E-F...

AH HAH.

/mmm.

AH HAH. DO YOU HAVE A PART TIME JOB? UH---

Yes. Ahh as a tutor.

YOU TEACH ENGLISH.

Yes.

/UH HUH.

Or history.

UH HUH. WHERE ARE YOU FROM? FROM OSAKA OR---

[10DIS]

The learner is responsive, and even volunteers information, but is somehow unable to help the teacher find a qualifying topic. Even though a stable topic is not yet available, the participants still treat each other's contributions as worthy of response.

Eventually, however, new topics are introduced into the discussion (17-18) and form stable resources for exchanging information. The following example shows one common way in which this is accomplished through a referential question.

(17) WHERE- WHERE IN KANSAI., UH, IS YOUR HOMETOWN?

Mmmm. Kobe City.

AH, KOBE CITY? HAH HA HA HA. + WELL, AAAND, UHH, DO YOU- HAVE YOU EVER SORT OF, UM, + EXPERIENCED NEW YEAR'S IN KOBE?

No.

NOOO. ++ UHHH---, + RIGHT. THEN WHAT- WHAT SORT OF THINGS YOU'RE GOING TO DO? ++ DURING - DURING THE NEW YEAR'S?

During New Year's?

YEAH.

/Mmmm. To tell the truth, my- um, my brother still- is studying---

YEAH.

For- entrance examination? + And I would like to
/AH, HAH-HAH-HAH.
help him.

YOU WOULD LIKE TO HELP HIM, YEAH.

/Hmmm. And also, I wanted
to meet my friends.

[9DIS]

The teacher's initial question is the end of a string of

responsive questions which are not topically developed. The next question, however, begins a period of development in which both participants share more or less equally. This question contains a group of markers ("WELL, AAAND, UHH") which function to hold a turn and indicate the imminence of a fresh topic to the listener. Although an interpretation of such markers is quite speculative at this point, it appears that the speaker intends to signal the exhaustion of one line of questioning and the beginning of another; the listener is also notified that what is about to be mentioned is probably worth consideration as the next topic.

Markers of the sort employed in (17) appear throughout the transcripts as likely topic boundaries. Frequently, however, topics are "pushed" much more aggressively than simply marking their desirable starting point. As (18) indicates, participants may preface a referential question with material which invites a particular response from the listener and which thus has the effect of directing the course of the conversation.

- (18) Uh, so - some my friends likes - wearing kimono, but many of - of - most of my friends don't like it. How about your - wife? Does your wife wear kimono?

MMM, WELL, OF COURSE MY WIFE IS ENGLISH, SO SHE THINKS IT LOOKS VERY - SHE DOESN'T FEEL UH COMFORTABLE + WEARING KIMONO. SHE FEEL IT'S - LOOKS A BIT + STRANGE. /Comfortable!

Ha, ha. Yes, I understand.

[5DIS]

This setting up of the conditions for the teacher's response is apparently effective. The teacher's response prompts the learner to re-assert an interest in the topic, although evidence of the learner's misunderstanding ("Comfortable!") initiates some corrective action in the form of a restatement. The negotiation is resolved successfully in this case, but even without a successful resolution the fact remains that the learner was able to set up a stretch of the conversation and cooperate in its development.

The transcripts for DIS also demonstrate how participants set up their own prospective contribution across more than one turn through use of referential questions. Although the listener is typically invited to negotiate the identity of a topical focus (a person, a thing, a place), it is not so much the listener's responses that matter as it is the initial speaker's intention to expand a topic of personal interest with the formal cooperation of a conversation partner:

(19) DO YOU KNOW, YOU KNOW WOODY ALLEN, DON'T YOU?
/Hmm.

I - Allen?

WOODY. WOODY ALLEN.

Yeah, I know.

YEAH. WOODY ALLEN AS A PERSON - IS - MISERABLE.
/Hmm, oh.

[4DIS]

"Formal cooperation" in (19) means that the listener is given opportunities to answer the question, to take official turns in order to continue cooperative work on the topic. The negotiation done here is significant in terms of the kinds of repairs the learner experiences (including a request for clarification, repetition and self-repetition). It is also significant, however, for what it demonstrates about the ways in which referential questions can be employed to effect the construction of discourse beyond the next conversational turn.

LEG2: Cooperative Problem-solving

The two problem-solving tasks (LEG1 and LEG2) were, like free-discussion, important sources for the production of referential questions. LEG2 will be considered here, however, because it was a somewhat richer source of referential questions than LEG1 (see Table 22). In addition, LEG2 extends the range of questions found in the discussion task, the only other non-teaching task which involved the participants in face-to-face talk.

The transcripts for both Lego tasks indicate an intense concern with finding and placing pieces in accordance with the graphic instructions. It is not surprising, then, that an essential feature of the discourse was negotiation over the precise location and appearance of objects, and the relationship of one object to another. What particularly distinguished LEG2, however, was the participants' ability to see what they were talking about and the influence of

this quality of perception had on the discourse. One effect already noted is the relatively high level of exophoric reference. Another, noted here, is the pacing of turns based on the search for or placement of an object. One participant, for example, may take a turn to ask how several objects might be distinguished from each other; the other participant may take the next turn to respond with what is intended to be information of use in making the distinction. Among the most common forms of referential question during this kind of cooperative exchange are questions which help the partner to provide efficient (i.e., time- and labor-saving) information, questions which request a focus:

(20) UH, NO, I GUESS THAT - isn't - THAT ISN'T IT. AH.
/No?

Which - which one?

UH--- /CAN YOU FIND ANOTHER ONE? WHERE IS IT?

Mmm.

THINK IT MIGHT BE CLOSE + IS THAT IT? OR IS THAT THE ONE YOU---

This is not--- + this one?

UH, UH, TRY IT. SEE IF YOU CAN PUT IT IN THERE - IN THE SAME WAY.

[2LEG2]

The teacher in this case, of course, is trying to provide useful information to the conversation partner and is continually checking the position of the pieces on the table against the position of pieces on the instructions. What serves well as a teacher's display question in the

instructional context becomes a referential question in the problem-solving context. Exophoric reference is an integral part of virtually all turns and is typically expressed through the medium of the referential question. The transformation of one kind of question into another depends virtually not at all on who is talking to whom, but rather on the underlying intention of one of the participants, the "teacher", to either teach or to exchange information with an equal in the business of moving a problem towards solution. In (20), above, both participants must ask and answer questions which focus the partner's attention; both participants thus effectively commit each other to supplying the needed information.

During construction of the Lego model participants would frequently request each other to assess performance or perception, or to otherwise provide guidance in the placement of pieces. In a cooperative situation, such requests in the form of referential questions are powerful influences on the speed with which the problem is solved and frequently constitute useful alternatives to a simple direct-and-respond strategy. Indeed, the negotiation which often follows the request, far from wasting time in roundabout discussion, is a central feature of efficient information exchange during problem-solving. The following excerpts illustrate three commonly employed requests for assistance: request for assessment (21), request for direction (22) and request for explanation (23).

(21) ON THE TOP. THEY'RE BLACK, THEY'RE SMALL.

Ummm. Isn't that right? Here?

YEAH, THAT'S, THAT'S ONE. YEAH. AND THE OTHER ONE
ALSO + ALSO IS - NO, THAT'S NOT IT

[4LEG2]

(22) THE TRUCK. BUT YOU MUST TURN THE WHEELS SO THAT THE,
THE PIECE WITH BUMPS IS UP.

I, I can connect?

YEAH.

Um hm. The bumps.

YOU WANT TO CONNECT THE WHEELS TO THE MAIN BLACK
PIECE. THERE YOU GO.

[12LEG2]

(23) It's impossible, maybe.
/IT'S IMPOSSIBLE? + IT IS? + UH +
DON'T WE FIND - SIMILAR - SQUARE ONE WHICH - CAN -
/This - Huh?
PUT IN THERE? + YOU CAN'T--- (4) WOW, WHAT HAPPENED?

I don't know.

[10LEG2]

All of these can be distinguished from requests for clarification by virtue of their focus on the task rather than the language by which the task is moved forward. Accordingly, the negotiation is precipitated by the referential questions--questions about content and action rather than language--which involve the listener in construction of an appropriate response. What constitutes appropriate content for the turn which follows the question is sometimes only barely suggested by the form in which the

question is put. Given a task in which sequenced information is vital to successful communication, such as LEG2, efficient requests for direction can be made with a single word and can also signal completion of one step and readiness for the next:

(24) WE HAVE THREE WHEELS. TAKE, TAKE THEM.

Yeah. ++ And?

ALL RIGHT. PICK UP THE PIECE AND PUT THE WHEELS ON THE BOTTOM.

[4LEG2]

Sometimes, however, a partner's perception must be assessed explicitly before the next step can be taken. This would ordinarily be accomplished by the person giving directions, although nothing in principle prohibits the recipient of directions from checking on the partner's view of objects in the task environment. Assessment of perception may signify that the task has reached a turning point or that the partner has demonstrated uncertainty, or an unconvincing degree of certainty, about what to do next. Functions of this sort are illustrated in (25), below.

(25) YEAH. AND UH, THEN PUT THE LONG BLACK PIECE ON THEM.
+ DO YOU SEE HOW THE WHEELS HAVE BUMPS + TO HOLD
PIECES?

Mm, I
/BETWEEN THE TWO WHEELS.

Between the two wheels.

YEAH. LOOK WHAT'S BETWEEN THE TWO WHEELS. LOOK AT THE PART BETWEEN THE TWO WHEELS. PICK UP A PIECE OF

WHEEL. YEAH, OK. SEE THE PART? IT HAS A BUMP. IT
HAS A THING WITH BUMPS TO + HOLD SOMETHING. OK, YEAH.
/two, uh four, four bumps.

Mm
/OK.

[12LEG2]

What seems to distinguish questions framed to check a partner's perception of the situation from questions intended to check learning (as in teaching tasks) is the emphasis on getting to the next step. A partner's perception becomes entirely irrelevant once this has been accomplished and there is no special value placed on the information beyond facilitating the task itself.

Display and Referential Questions:

Summarizing the Contrasts Between
the Teaching and Non-teaching Tasks

The analysis of variance demonstrated significant differences between tasks on the basis of question types, most particularly on the basis of display and referential questions. The textual analysis has further examined the contexts in which particular kinds of display and referential questions occur and outlined various discourse functions which are accomplished by these questions. This analysis has clarified the intensive use of display questions during the two teaching tasks--that display questions are essential features of a teacher's instructional behavior--and underscored the role of referential questions as fundamental structures of ordinary social exchange.

The textual analysis has also suggested several differences between tasks based on the predominance of either display or referential questions. These differences, it should be emphasized, are based on the observation of dyadic discourse in an experimental rather than a naturalistic setting, although the qualitative method of analysis has treated the discourse as natural texts.

1) Whereas referential questions serve a broad variety of functions related to information exchange in non-teaching tasks, display questions focus relatively narrowly on the extent and quality of learning associated with a teacher's instructional purposes.

2) Following from 1), the scope of referential questions in a given non-teaching text appears much wider than in a given teaching text. Opportunities for learners to negotiate the language by which the task is accomplished with a willing partner are thus considerably increased over the opportunities available during formal instruction.

3) By definition, display questions have only one correct answer; the arbiter of correctness is invariably the teacher. This feature of display questions contributes to their relative efficiency in accomplishing educational purposes, although they would appear to be relatively inefficient in creating the conditions for freely exploring topics which have not been planned prior to instruction. Referential questions are often open-ended; while they may

influence behavior, they do not necessarily require a specific response.

4) Following from 3), referential questions are especially useful in opening up conversational topics which occur as each speaker takes a turn. Indeed, although referential questions are not necessary for information exchange to occur, it is difficult to imagine conversations in which they do not play an important part in making exchange of information easier. Although the point is speculative and requires further assessment, non-teaching tasks which emphasize the solution of problems may be conducted with greater efficiency--with greater speed and direct movement towards the solution--when referential questions are applied to the task than when they are not. This would seem to be an unintended, although felicitous, effect of use of referential questions. In contrast, display questions are characteristically intended to improve the efficiency of instruction. It is still very much an open question, however, whether instruction which is conducted with the use of display questions results in a faster or higher level of achievement than without their use.

5) The negotiated character of non-teaching talk is marked by recourse to referential questions (and such other repair behaviors as confirmation checks, clarification requests and self-repetitions). Although referential questions are ordinarily ostensibly targeted on the content

of the talk--ways to spend New Year's, construction of a toy spacecraft--they are also very much involved in the moment-to-moment comprehensibility of the talk to each of the participants. Just as a clarification request may lead a partner to repeat or rephrase, a referential question which presses the listener to expand or exemplify a statement also thus initiates a period of negotiation. Since the language of display questions, by contrast, is fundamentally concerned with testing knowledge or understanding, the kind of negotiation which does occur during a teaching task is characterized by such moves as learner-produced expressions of lexical uncertainty or teacher-produced definitions. Under these instructional conditions, it is not especially likely that teachers will entertain questions from learners which effectively shift the power to nominate and control topics.

6) The final distinction to be drawn between display and referential questions is explicitly concerned with the distribution of power and rights over talk during various tasks. Display questions can be viewed as operationalization of the teacher's responsibility for organizing and carrying out instruction. Display questions constitute a kind of ready evidence that the teacher is the center of control in the instructional process and that the learner, ideally, is willing to demonstrate the extent of learning without engaging the teacher in an exchange of information. Beyond a fairly narrowly construed level of

exchange, perhaps in the form of a role in a textbook drill or an expression of lexical uncertainty which the teacher chooses to deal with, the learner is unlikely to exercise much control over either the teacher's or the learner's participation. Referential questions in ordinary conversational or problem-solving tasks, by way of contrast, signify a shift in the balance of responsibility for repairing and elaborating talk. In the transition from instructional to non-instructional contexts, teachers give up some of their control over the discourse while learners take much of it in.

Repair in Complementary Task Structures

The discussion next turns from the forms of display and referential questions in various task settings to the functions of two small groups of repairs found in complementary task structures (Figure 18). These structures are the repairs found at the intersection of the teaching and expository tasks on the one hand (hereafter Group 1, including definitions and expressions of lexical uncertainty), and the non-teaching and experiential tasks on the other (Group 2, including confirmation checks and referential questions). It should be stressed that Group 1 and Group 2 structures are merely convenient ways of summarizing the results of a quantitative analysis. Further, Group 1 and Group 2 structures are only suggested by the analysis and not demonstrated by it. The brief examination which follows thus has a foundation, although it

must still be described as a fairly speculative way of distilling the discourse into clearly contrasting sets. The general questions to be raised during the analysis are, "What are the links, if any, between the repairs in each of the task structures? What does the discourse look like when the repairs in each category co-occur?". This view of the transcripts is intended to offer some insight into the "short lists", the distillation, of repair exponents as they are found in two, apparently very different, task environments.

Group 1: Definitions and Expressions of Lexical Uncertainty

More than any of the other tasks, COM1 was concerned with communication of abstract knowledge from teacher to learner entirely through a verbal medium. By comparison, the back-to-back lego task, LEG1, permitted reference to graphic instructions and required one of the participants to move objects around on the table. As an instructional task, moreover, COM1 involved the teacher in frequent, short digressions over bits of knowledge related to, but not essential for, proper operation of the computer. These digressions typically took the form of definitions, some of which were elicited by the learner, some of which seemed to anticipate a question from the learner over a just-mentioned step in the procedure. Although definitions which were apparently unrelated to lexical uncertainty were found in the transcripts, evidence of lexical uncertainty more

typically helped the teacher to weave abstract knowledge in the form of a definition into the talk. This fairly sophisticated kind of verbal performance, it should be noted, is the province of the teacher during instructional talk. Although teachers may elicit definitions from their learners in order to test knowledge, it is more typically the case that teachers treat lexical uncertainty, both their own and the learner's, as a kind of tripwire for production of a definition.

This relationship of lexical uncertainty and definition, specifically of lexical uncertainty occasioning definition (LLEX → DDEF), is illustrated in the next excerpt. The excerpt begins with a display question designed to test cognitive knowledge (understanding of the concept string). LLEX and DDEF are indicated by underlining and marginal notation; repair exponents for which the learner is responsible are shown with an S added (e.g., LLEXS).

(26) DO YOU KNOW WHAT A - PIECE OF STRING IS?

String---

IN OTHER WORDS, THREAD?

Thread? Ah, thread. Uh -

LLEXS

THAT'S IT. A STRING IS JUST A THICK
PIECE OF THREAD---

DDEF

BUT IN, IN COMPU--- UH, COMPUTER
/rib - ribbon. ribbon. No.

LLEXS

DOESN'T HAVE A RIBBON. TH - THERE'S A
SPECIAL MEANING OF THE WORD STRING IN
THE COMPUTER. IT JUST MEANS A WORD, A
PHRASE OR SENTENCE.

DDEF

[2COM1]

The learner's lexical uncertainty is taken as evidence that more instruction is required, which the teacher supplies immediately in the form of definitions--one following each indication of lexical uncertainty.

An open-and-shut relationship between lexical uncertainty and definition is a fairly common pattern, although it is not always the case that opportunities for negotiation are so abbreviated by the teacher's interest in instructing. For example, the impression of a learner's lexical uncertainty may be demonstrated over several turns and through the use of several devices: echoes, fumbling over words or phrases (as in excerpt 26, above), or, simply, direct requests for information about something the teacher has recently inserted into the conversation. Because such devices serve to recycle conversational material, or to redirect the discourse over several turns, negotiation is clearly in evidence when they are employed. The following illustrates how learners can rivet the teacher's attention to the learner's lexical priorities. LLEX in the form of a fumbling search for the right word does not specifically precipitate a definition, although the overall impression is that lexical uncertainty is the basis of the learner's claim on the teacher's attention.

- (27) AND I THINK THIS IS THE UH + THE SWITCH
FOR - ADJUSTING REFRECTION - OF THE UH -
LIGHTS

Refraction means---

MEANS---

What?

AH, REFRECTION + OKAY, UM + HE HERE WE
HAVE LIGHT--- OKAY, - AND ON THE SURFACE
- OF THE GLASS.

DDEF

Yes.

OKAY, THE LIGHT REFLECTS.

Ah hnn - Yes, yes.

/RIGHT? - THAT THE REFRECTION. THE
NOUN FORM OF REFLECT.

/Uh ahhh, ahh, ah, I understand, yes.
/OKAY?

[6COM1]

The teacher's discussion of "reflection" (including the initial attempt at a definition) is constructed across several turns and closely follows the learner's interventions. Even though the task as a whole is devoted to instruction, more specifically the teacher's intention to cover a limited set of objectives established before the task begins, it is the learner who manages to channel part of the instructional process towards resolution of trouble created during the course of the conversation. This may not be especially what the teacher had intended, although extension of the definition across turns and through negotiation does indicate that Group 1 settings are not driven only by authoritative monologues.

Further variation from the simple LLEX -> DDEF pattern appears in the transcripts. Sometimes, for example, definition precedes or occurs virtually simultaneously with

an expression of lexical uncertainty (DDEF -> LLEX or DDEF + LLEX). These are cases in which the definition itself comprises the source of negotiable trouble. It thus matters relatively little whether a definition is prepackaged or otherwise made difficult to break down, if it is going to be "challenged" by one of the participants. As the following excerpt suggests, definitions may well be a useful source of negotiable material during teaching tasks.

(28) SO, UH, WHEN YOU WANT TO MOVE THE MARKER,
WE CALL THAT MARKER A CURSOR. DDEF

Cursor.

CURSOR. IT COMES FROM THE WORD MEANING
"RUN". OR MOVE. SO IT, IT SHOWS WHICH

/cursor
WORD THE COMPUTER IS WORKING ON. + SO THE DDEF
/Mm hm
 BUTTONS AT THE RIGHT ++ CORNER CAN BE
/Mm
 USED TO MOVE THE CURSOR UNTIL YOU FIND
 THE WORD YOU WANT.

Mm. The, uh, + letters, uh files? LLEXS

THE WORDS ON THE SCREEN RIGHT NOW. AFTER
/words
 YOU TURN THE MACHINE ON, UH
/moves + left or
 right?

MOVE, YEAH, THE CURSOR MOVES LEFT OR
 RIGHT. THE WORDS STAND STILL ON THE
 SCREEN AND THE CURSOR MOVES FROM ONE WORD
 TO THE NEXT WORD.

/Ah hah. Cursor moves!

[12COM1]

The definition poses a lexical problem for the learner which the teacher handles through analogy, example and reference to parts of an invisible computer. Virtually all

of what the teacher says is keyed to the learner's responses: an echo which could reasonably be taken as a request for clarification ("Cursor."), a second echo ("cursor") which appears to influence the teacher's reference to the cursor keys, a direct request for clarification which prompts further reference to objects on the imaginary screen, and a referential question which obtains confirmation through repetition and expansion. Lexical uncertainty and other indications of trouble in this example, then, are a product of definition and generate negotiation over meaning and repair precisely where they are needed.

Definition and lexical uncertainty also co-occur within a given speaker's turn in close proximity to each other. Given the nature of COM1, however, the difficulty the speaker experiences--specifically, the indication of lexical uncertainty--is treated quite differently depending on whether the speaker happens to be the teacher or the learner. The preference for self-repair (see, for example, Sacks et al., 1977; Schwartz, 1980) is vitiated in the teacher's behavior (29); other-repair (see Kasper, 1985), however, is more likely when the learner signals uncertainty (30).

- (29) OR, UH, - EY ++ UH, I DON'T KNOW HOW TO
CALL THIS, BUT UH, - IT'S CALLED UH, LLEX
GROUP OF WORDS, OR, THE WORD - IS CALLED
"STRING". + AND SO UH, YOU CAN, IF Y- DDEF
 WITHOUT HELP OF A COMPUTER, YOU CAN

LOCATE ++ UH, THE EXISTENCE - OF EACH, OF
SUCH EXPRESSION OR WORDS.

[8COM1]

The turn continues for an additional 55 words and altogether includes seven relatively long pauses. In perhaps more ordinary conversational environments, listeners can use these pauses to steal a turn. In this case, the learner did not attempt to help in either the period of lexical uncertainty or the definition.

When the learner, however, has been instructed to produce a definition, and then signals lexical uncertainty, it may not be surprising to find that it is the teacher who takes responsibility for making the repair.

(30) WHAT'S TH- WHAT'S THE MENU?

The menu is the choice - uh - what - uh
what - uh what can I ch- - uh, the
choice of - my - the section.

LLEXS
DDEFS

OKAY. IN THE COMPUTER - THERE - ARE
RECORDED IN THE MEMORY OF THE COMPUTER A
NUMBER OF - FILES. THESE FILES CONSIST
/Hmm.
OF PAPERS WITH INFORMATION.

[4COM1]

Based on this brief examination of a relatively small group of co-occurring repairs in tasks which are conducted through teaching and exposition, it may be useful to suggest the ambivalence of the Group 1 task. Although negotiation over definitions and lexical uncertainty can and does occur in Group 1 tasks, a Group 1 task can also be

conducted by directing or otherwise co-opting the learner's responses. This sort of ambivalence is generally not found in the non-teaching and experiential task structure, the final field of analysis to which the discussion now turns.

Group 2: Confirmation Checks
and Referential Questions

Although the qualities of referential questions have been outlined in the analysis of discussion and problem-solving tasks, the confluence of referential questions and confirmation checks requires a closer look. In general, transcripts for both Lego tasks show that these forms of repair taken together are pivotal sources of interaction.

What are the basic patterns of interaction when referential questions and confirmation checks co-occur? Perhaps the most typical way that participants work through conversational problems, that is, problems over the meaning and interpretation of an utterance, is a speaker's reformulation of an utterance in response to a partner's indication of non-comprehension, and then commitment by that partner to a course of action which is in turn evaluated by the original speaker. Variations of this pattern allow insertion of additional repair cycles based on the evaluation: Was the action proposed by the partner (here, the learner) likely to satisfy the speaker's (teacher's) understanding of a "correct next step"? Recalling that the task now under consideration (LEG2) entailed continuous feedback on the efficacy of the partner's actions in

assembling a toy model, it comes as no surprise that the participants enforced a rather severe standard of clarity in order to accomplish the task successfully.

The basic pattern is illustrated in (31), below:

- (31) THAT'S GOING TO GO ON - THEE - SSECOND
SSET + OF POINTS.
 /second---? CCONS

 Second? CCONS

 THE SECOND SET.

 + Like this? RRQS EEXOS
 /YEAH. - I THINK SO, YES. Eval.+

[7LEG2]

The indication of trouble (from the learner's perspective) is underlined and labelled (CCONS--a confirmation check), as is the learner's attempted solution (RRQS EEXOS). The teacher's positive evaluation of the attempt (Eval.+) is also noted in the margin of the excerpt. In this case the teacher's initial response to the learner's difficulty is an other-expansion, which turns out to be just enough information to help the learner identify the correct placement of the object. The learner's commitment to a course of action is a much more direct method of obtaining an unambiguous evaluation than the confirmation check alone, a purely verbal tactic. The commitment is indicated by use of exophoric reference, a verbal tactic which is frequently accompanied by gestures such as pointing or touching. This intensified approach to generating evaluation gives the learner a powerful level of control over the quality and

precision of feedback, and ultimately produces a more efficient solution to the problem. This pattern of interaction, then, is marked by a verbal trouble signal and a combination of verbal and physical signals designed to direct the quality of the teacher's next utterance.

The pattern becomes more complex, of course, when the participants find that the simplest level of exchange does not carry the task forward. Essentially, the level of complexity--the depth of negotiation--is keyed to the capacity of confirmation checks and referential questions to create loops in what would otherwise be straightforward movement from one step of the task to the next. This level of complexity is exemplified in the following excerpt.

(32) NEXT, YOU WANT TO FIND - TWO - SMALL
RECTANGULAR - YELLOW PIECES.

Rectangular?!

CCONS

REC - RECTANGULAR, WHICH MEANS THAT THEY
ARE - S - NOT SQUARE BUT LONG AND
THIN. NOW + NO, NOT THOSE. THEY,

Eval.-

/Is this?

RRQS EEXOS

THEY'RE FLAT PIECES, THEY'RE - FLAT -

/Flat?

CCONS

THEY'RE OF THE SAME TYPE OF SHAPE AS THE
- BASE - OF THE + SO,

/Base?

CCONS

YES, BUT - SMALLER THAN THAT. YOU NEED
/Is this?

Eval.-

RRQS EEXOS

SMALL + SMALLER, SEE?. YES. OKAY. NOW -

Eval.+

/Yes.

[5LEG2]

While the learner's language is not elaborate, it appears sufficient to generate a highly responsive stream of

directions and evaluation. The end of this corrective sequence is signaled by the learner's identification of the correct piece, very much like the simpler pattern examined above (31). Accomplishing this identification, however, entails much greater effort by both participants: a candidate identification which, in fact, fails, additional confirmation checks to recycle the search for the correct piece, informative responses to each confirmation check, and a final, positive evaluation which allows a new step to be initiated.

Overall, the impression is one of quick recovery from the local ambiguities of the task, effective verbal cooperation but, at the same time, a rather terse and unexpressive quality in the learner's language--perhaps a function of the high level of information available to the learner about objects in the task situation. It may be that learners in such information-rich situations are simply unchallenged to use language beyond the minimum limits of necessity. Although the basic forms of genuine information exchange are in place, as evinced by the central position of confirmation checks and referential questions, the participants are not especially prepared to make conversation beyond the practical requirements of the task. The kind of language which the learner may reasonably apply during construction of the model thus clearly contrasts with the relatively more expressive language used by learners during ordinary discussion. Educational implications of

this distinction will be explored in Chapter 7.

For the moment, however, the focus is on the quality of information exchange which is supported by confirmation checks and referential questions during the face-to-face Lego task. Beyond the general issue of participants using confirmation checks to encourage a partner to provide additional or expanded information, there is a specific function for referential questions used with confirmation checks in outlining the limits of the local problem on the which the participants are at work. This function resembles the "setting up" of responses previously noted in other face-to-face tasks (COM2 and DIS) in which the question is apparently intended to set limits on the forthcoming response. Learners who are able to direct their partners in this way can be said to be successful in helping to manage the task, as excerpt (33) indicates.

(33) UH BETWEEN THE TWO SQUARE ONES. ++ YOU
CAN SNAP IT ON TOP OF THE TWO SQUARE
ONES.

Uh - this way?

RRQS EEXOS

NO, THE OTHER WAY.
/No.

Eval.-

The other way?

CCONS EEXOS

YEAH.

Eval.+

OKAY. PUT IT ON TOP OF THEM.

Top of them?

CCONS

YEAH. O- ON TOP OF THE TWO SQUARE PIECES
SO THE TW- SO YOU PUSH THE TWO SQUARE
PIECES TOGETHER.

Eval.+

Th like this?

RRQS EEXOS

[3LEG2]

The learner's referential questions bracket attempts (in the form of confirmation checks) to remove layers from the mystery of how one piece is to be placed in relation to the others. This process is related to zeroing in on the positioning of pieces, not to the meaning of the teacher's initial directive nor to the learner's difficulty in sharing the teacher's view of the pieces. In either case, however, the participants are able to move more-or-less successfully through the task by combining language and situational reference--the hallmark of problem-solving done under conditions of shared perception.

The final link between confirmation check and referential question to be described here is the learner's self-repair which obviates intervention by the teacher to add or change information in order to make the directions more comprehensible. Repair occurs immediately following the learner's public demonstration of a problem.

(34) PLEASE FIND A BLACK ONE WITH A TWO TUBES
/Hm
ON THE BOTH SIDES, AND WITH TWO BUMPS ON
IT.

Tubes? This one?
/OKAY, YEAH, THAT'S RIGHT,
THAT'S RIGHT. OKAY.

CCONS RRQS

Eval.+

[6LEG2]

In principle, either of the participants has the right to repair under these circumstances, although, as has been

pointed out with reference to definitions following lexical uncertainty, it is the teacher who is more likely to intervene during instructional tasks and make the repair (Kasper, 1985). LEG2, however, renders the problem and its solution as the central issue and tends to suppress the importance of status differences between teacher and learner. This may be a characteristic of problem-centered tasks in general (although it should be pointed out that no evidence has been presented on behalf of the back-to-back Lego task to support the wider possibility).

The transcripts reviewed thus far, however, suggest the central role of confirmation checks in indicating trouble and of referential questions in pointing out a candidate solution during the performance of problem-centered tasks. That these functions are often exercised by the learner in the same turn during the face-to-face Lego task further supports the view raised here that the learner is largely capable of asserting normal conversational rights given the appropriate task structure.

Summary

This chapter has extended the findings of the analysis of variance into two fields of qualitative analysis: 1) a comparison of display and referential questions, and 2) an examination of two sets of complementary task structures, including definitions and expressions of lexical uncertainty during the computer demonstration task, and confirmation checks with referential questions during the face-to-face

Lego task.

A number of functions were found to characterize teacher-learner talk during the computer demonstration task: display of the learner's knowledge presumably acquired as a result of instruction, pointing-out of objects or operations the teacher found useful for moving smoothly through the instructional procedure, setting up behavior and leading the learner to "inescapable conclusions" the teacher considered essential to furthering the goals of instruction, and pre-empting the learner's opportunities to ask and answer questions which could lead to negotiation over meaning. The primary verbal medium for accomplishing these functions was found to be various forms of the display question.

Referential questions were found most frequently in the discussion and face-to-face Lego tasks, both of which reduced the importance of the teacher-learner status gap and encouraged active exchange of information. Referential questions were found to serve a number of local functions, including encouraging a partner to expand material just introduced into the talk, gradually developing a topic, nominating topics for consideration and developing them across a number of conversational turns. Participants used referential questions during cooperative problem-solving, in particular, to request identification of objects or relationships between objects, assessment of performance and perception, explanations and directions. The central function of referential questions, however, was to assist

the exchange of information between partners of relatively equal status in the task setting.

Examination of the two sets of complementary task structures emphasized the co-occurrence of certain REs. Although the learner's lexical uncertainty during the computer explanation task (COM1) was typically the tripwire for a teacher-made definition, the definitions themselves could become the subject of negotiation. When repair did occur, however, it was often a case of the teacher taking responsibility for repairing the talk of both participants. Confirmation checks and referential questions occurring together during the face-to-face problem-solving task (LEG2) characteristically opened up the talk to negotiation over both content and language. Moreover, by combining the use of confirmation checks and referential questions, both participants attempted to repair their own utterances, a typical feature of normal conversational behavior, within their own turns. Finally, while confirmation checks took on the key function of indicating trouble, co-occurring referential questions were used by next-speakers either as a pivot for further work on the problem or as an opportunity to signal that participants had achieved a common understanding and could move on to something else.

Perhaps the most general conclusion which can be reached from this qualitative phase of the study is that some tasks are better for teachers and others are better for learners; from an interactional viewpoint, some encourage

display of the teacher's competence while others promote expression of the learner's competence. It should be also be noted that while all tasks produced negotiation over meaning, the quality and extent of this negotiation clearly varied with the task. In general, the teaching tasks required the learner to become a largely passive recipient of sometimes abstract explanation and curbed timely opportunities for making sense of the shower of explanation to which the learner was sometimes exposed (Chaudron, 1983 notes a similar pattern in classroom behavior). Ironically, the non-teaching tasks achieved greatest efficiency when they were conducted in apparently roundabout fashion--when the participants had to make several attempts to reach a working level of mutual comprehensibility.

The two task structures clearly diverged in terms of what signalled trouble and how participants resolved it. In COM1, movement from lexical uncertainty to definition constituted the least responsive, least complex level of negotiated exchange found in the transcripts. In contrast, the alternation of confirmation checks and referential questions were key features of the relatively complex, open-ended and cooperative exchanges in LEG2. This depiction of the two sets of repairs, it should be stressed, is based on examination of a relatively small number of transcripts (24 of the total of 60). The transcripts display the distinction with clarity, however, and, hopefully, make findings from the analysis of variance more tangible to the

educational practitioner. Accordingly, the final chapter which follows will extend these findings into implications for educational practice.

CHAPTER 7:

SUMMARY, LIMITATIONS, IMPLICATIONS AND CONCLUSION

Chapter 7 concludes this study of conversational repair and reference. Several major points have been made during the course of the study; these will now be summarized. Limitations of the study or areas in which it might be misinterpreted will be discussed and implications for educational practice which are based on the empirical analyses will be highlighted.

Summary

The study was conceived in order to examine systematically the ways in which members of native and non-native teacher-led dyads modify their talk in English in order to achieve understanding. Underlying this interest were the observations, supported in the literature of second language acquisition, that the extent and quality of interactional modification varies with the characteristics of the setting in which the talk occurs and that the greater the opportunities for modification, the more likely learners are to acquire the target language. The traditional classroom-fronted behavior of language teachers in this view of second language acquisition has been found a relatively inefficient means of guiding language instruction in comparison with learner-learner interaction. What had not been examined, however, was the systematic treatment of native and non-native teachers as co-participants in dyadic

interaction with learners, and the effects such treatment has upon the talk produced within the dyad.

The terms used to support the study were drawn from research in second language acquisition, discourse analysis and language education, three fields with specific and somewhat different interests in the uses of language in context. The research focused on the effects of different tasks on the ways the participants in teacher-led dyads repair conversational trouble and refer to things in their spoken texts. Underlying this formulation was a small group of distinctions of potential value in educational planning and of immediate use in construction of the research design: that tasks--the settings for use of repair and reference--vary qualitatively from those which emphasize educational goals to those which emphasize social goals, and from those which employ experiential, "hands-on" processes in the achievement of the objectives to those which emphasize the role of exposition and explanation.

These ways of looking at repair, task and reference were operationalized through the research design, specifically through a series of analyses of variance which examined the difference between native and non-native groups in the use of repair and reference during a series of five tasks. A second type of analysis focused on a small group of repair exponents which were found to distinguish most clearly among the tasks. The second analysis emphasized the forms and functions of repair in context,

pointing directly to the utterances of the participants in the task transcripts.

Before summarizing the major conclusions of the study, it will be useful to put the conceptual bases and the findings of the study into a common perspective. The Knowledge Framework originally developed by Mohan (1986) suggested a relationship between theoretical knowledge and expository activity on the one hand, and between practical knowledge and experiential activity on the other. An extension of the framework (Figure 2) was offered as a tentative and partial approach to specifying the characteristics of tasks, reference and repair which might be expected when the framework is applied to problems in language education.

Among the links between the extended framework and the results of the study are the unambiguous relationships found between tasks emphasizing practical discourse, and a group of repair behaviors centering on questions intended by one participant to obtain information or guidance from the other. As noted in Chapter 6, for example, the referential question serves numerous discourse functions, alone or in combination with other behaviors. It is primarily, however, a means of opening talk to unforeseen topical development and to a more equal distribution of power in the discourse environment. The other side of the extended Knowledge Framework suggested a link between expository approaches to teaching and the teacher's use of display questions to test

knowledge and ensure movement towards predetermined instructional goals. Following this suggestion, the study found significant relationships between the teaching tasks and display question and, indeed, a nearly symmetrical relationship between display questions and referential questions in the teaching and non-teaching tasks.

Other links, and failures to link, can be pointed out, particularly the finding that exophoric reference provides unambiguous evidence for the operation of experiential activity, but that anaphoric reference is freely used in nearly all task settings. Although the framework should be treated with caution by other researchers, it has served the useful function of generating focal points for the quantitative and qualitative study of repair in instructional settings.

The following list summarizes the most general conclusions yielded by this dual approach to the research.

Conclusions Based on the Analysis of Variance

1. Teacher-led, dyadic tasks differ significantly depending on whether they are organized to support primarily educational or social objectives. Repair and reference are clearly allocated to this initial division of the task factor: definitions, display questions and echoes to the teaching tasks, clarification requests, comprehension checks, confirmation checks, expressions of lexical uncertainty, referential questions, self-expansions, self-repetitions, and anaphoric reference and exophoric reference

to the non-teaching tasks. Tasks which are explicitly organized to effect instructional goals are thus relatively less likely to reflect the breadth and quality of negotiation which characterizes tasks oriented towards achievement of social goals.

2. The preference for self-repair, as distinct from other-repair, is compelling and active when groups are organized as teacher-learner dyads. Among the 12 repair exponents, only those which highlighted the behavior of the other member of the dyad (other-repetition and other-expansion) were without significant effects in any of the tasks. While the literature suggests that ordinary teacher-fronted language instruction encourages other-repair (largely repair of the learner's talk), dyadic interaction which is not focused on the target language, even when oriented towards communicating instructional goals, does not support other-repair. Tasks which have no special focus on language instruction thus more closely resemble normal conversational behavior in terms of the preference for self-repair.

3. In general, the least important distinctions in the study were related to the group factor. Given at least a professional level of competence in English, Japanese teachers are at no special disadvantage over their native English-speaking counterparts in working with learners in dyadic task settings. This conclusion is based on the virtually indistinguishable types and levels of repair and

reference produced by dyads in which English language proficiency was controlled.

4. Like repair, reference is allocated to tasks, although the essential distinction between tasks shifts from a teaching-non-teaching dimension to an experiential-expository dimension. Concern with the here-and-now and the sharing of perception as a conversational resource produce an intense use of exophoric reference. Exophoric reference serves as a signature of experiential conversational activity, and is thus distinguished from anaphora which becomes a significant resource only when normal access to the speech situation has been cut off. In this sense anaphoric reference serves to manage reduced contextualization and build links across the discourse as they are needed.

5. The clearest, least qualified allocation of repair to task occurs when tasks contain both goal and process dimensions, that is, when a particular combination of social-educational and experiential-expository values has been applied to planning the task. The intersection of social goals and experiential activity produces the most negotiation and repair in teacher-led dyads (as measured by the mean frequency of confirmation checks and referential questions) and thus resembles conversational behavior outside of traditional teacher-fronted classrooms. When educational objectives and expository activity are emphasized, dyadic talk is oriented to transferring

cognitive knowledge which the teacher possesses prior to beginning the task to a learner who is assumed to be a naive participant. The characteristic repair behaviors which occur during this kind of task include frequent definitions and expressions of lexical uncertainty--forms of verbal behavior of particular use to teachers and learners in traditional classrooms.

Conclusions Based on the Analysis of Transcripts

6. Display questions, essential tools of teaching situations, serve a variety of functions related to transfer of knowledge and control over the learner's opportunities to direct the talk. Beyond simply testing the learner's knowledge, display questions also function to cut through ambiguity which might otherwise have to be negotiated, lead the learner directly to "inescapable conclusions" and pre-empt challenges (intended and unintended) to the direct line the teacher has apparently already developed towards the goals of instruction. Within a teacher-fronted frame of reference with explicit instructional goals (as was found here in the computer demonstration task), display questions arguably improve the efficiency with which the instruction is delivered. Unfortunately, however, this kind of efficiency appears to have little effect on enriching the interactional quality of talk conducted between teachers and learners.

7. In tasks which are oriented toward expository communication of educational objectives, definition is a

central concern of teachers. Definition may anticipate or be triggered by the learner's lexical uncertainty. In either case, definition can become a negotiable resource unless the teacher directs or co-opts the learner's responses in aid of movement towards an instructional goal. Comparatively viewed (i.e., viewed from the perspective of tasks allowing more-or-less equivalent rights to participation), definition co-occurring with lexical uncertainty is a useful although weak source for negotiation of meaning since it depends largely on the teacher's program for operation of the task.

8. Referential questions are a central feature of non-instructional, face-to-face talk. Beyond the general function of opening up the talk to negotiation over both language and content, referential questions bring explanation and direction into the discourse on an ad hoc basis. In conjunction with confirmation checks, referential questions can also be used to elicit evaluation, focus on objects or operations in the speech situation and undertake repair. Exercise of these functions frequently means that information exchanged by the participants follows an indirect pattern entailing evaluation, backtracking, revision and expansion before the conversation moves on to new topics. It is precisely this potential for roundabout pursuit and exchange of information, for recursive and open-ended interaction, which makes non-teaching tasks which employ some experiential processes prospectively useful

settings for acquisition of another language.

These conclusions outline the substance of the empirical study but they also point back to research which illuminates the position of foreigner talk and interlanguage talk in second language classrooms. Chaudron (1983), Long & Sato (1983) and Wesche & Ready (1985), for example, pointed out the relative inefficiency of FT in traditional, teacher-fronted classrooms. In a similar vein, this study found that the teaching tasks encouraged both the foreign and Japanese teachers to use such REs as display questions and definitions when attempting to accomplish their objectives and that the learners tended to support the teachers in this behavior by concerning themselves with demonstrations of attention, by use of echoes, for example. Studies on the functional properties of IT, on the other hand, have shown that NNS-NNS interaction in shared-goal environments produces repair behavior comparable to and about as varied as NS-NSS interaction in conversational settings (Duff, 1986; Porter, 1983; Porter and Long, 1985). The cooperative and information-exchange qualities of the non-teaching tasks in this study seem to have produced similar results, particularly with respect to such repairs as clarification requests, confirmation checks and referential questions, although it should be recognized that the NNSs in this study were Japanese teachers who were able to serve as sources of high-quality input.

Although cooperation was evident in all of the task

conditions, very different forms of cooperation prevailed in the two complementary task structures outlined in Chapter 5. Beyond the research findings discussed earlier, the essential conclusion of the study is that language teachers--native or non-native--and learners in dyadic settings can negotiate their discourse when they have been offered the right conditions: an orientation to content more than language, objectives which are treated as more social than educational, and direct (although not unlimited) experience with the objects of their talk.

Limitations of the Study

Before going on to possible applications for the study, it will be useful to point out some of its limitations or areas in which it ought to be clarified. As will soon become evident, there is a close relationship between pointing out the limitations of a study and considering ways in which others may want to extend it.

The first question to be raised here is how far one can generalize from findings achieved in quasi-experimental studies to the problems of practice which occasion such studies in the first place. Although the conduct of this investigation lies within a growing SLA research tradition--statistical treatment of conversational data generated from groups organized specifically to demonstrate behaviors of interest to the researcher--its findings do not therefore gain automatic applicability to the world of educational practice.

As in all cases in which control over a large number of variables is of importance to the researcher, links between the research design and educational practice are worth noting. For example, most of the tasks comprising the task factor are similar to those which language teachers could employ in a task-based syllabus (see, for example, Brown & Yule, 1983; Brumfit, 1986; Littlewood, 1981; Long, 1985b). A wide range of tasks, in terms of content and focus, is made possible when the teacher releases control over language and instead expends effort on organizing learners to solve problems or exchange information. To the extent that the reporting of the study may have obscured some of the links with educational practice, it is also worth pointing out that choice of several tasks was based on preliminary observations of NNS-NNS (Japanese-non-Japanese) teacher-learner interaction devoted to technology transfer. This point is expanded somewhat in the next section which outlines implications for educational practice.

Another issue related to generalizability of the research findings is the relationship of method, of subject selection or sampling procedures, for instance, to problems of practice. One area which has not received much discussion in this study is the generalizability of results obtained through the qualitative analysis, in particular the bases for selection and presentation of excerpts used to depict specific patterns of repair. A purely ideographic approach to conversational data would not have been

especially concerned with systematic sampling of data at any level in the analysis nor with attempting to generalize beyond the defined context; a purely nomothetic (or "law-seeking") approach would have avoided opportunistic sampling altogether and would have emphasized the systematicity by which the data were sampled and examined (Burrell & Morgan, 1979). Recalling that the text sampling procedure was something of a compromise between these methodological extremes, the study may have turned out a series of interpretations which are neither art nor science and which may therefore fail to convince at either level.

Beyond simply accepting the qualitative analysis on its own merits, however, there is always the option for other researchers to re-examine and make sense of the original data using the same assumptions which guided the first analysis. This could mean in practice, for example, using the original repair exponents and re-examining the original sets of transcripts in order to produce a comparable interpretation of the data. Rather than attempting to replicate the results in this way, however, it might be a great deal more interesting to treat the qualitative analysis as a general format for examination of data generated by similar groups in similar conversational settings. What is emphasized in this view of the analysis is not so much the findings in the original study but the uses to which its methods can be put in further studies.

The last limitation taken up here is the practical

problem of teachers serving as partners in classes with large numbers of learners, a problem which has not been clarified adequately thus far. Although this study has argued that teacher-learner dyadic interaction may be a useful alternative to teacher-fronted whole-classroom instruction, reliance on teacher-learner groups to the exclusion of other organizational forms is unlikely to be an efficient use of the teacher's time. One of the explicit assumptions behind the study was that alternative roles for teachers in foreign language education had not been adequately explored in the literature. Many teachers and the educational systems which support them would be reluctant to give up direct, teacher-learner contact during the course of an instructional program in favor of a syllabus organized around learner-learner interaction. Nothing in this study should be taken to suggest that teacher-led dyads are the only or best approach to foreign language instruction, however. On the contrary, while consideration of alternatives among possibilities for teacher-learner interaction served to motivate the study, it should be stressed that opportunities for NNS-NNS exchange in classroom settings can take many useful forms beyond the cooperative participation of NNS teachers and learners in dyadic groups.

Implications for Educational Practice

What does the study offer for those who plan and conduct foreign language education?

First, the results support the capacity of non-native teachers with a professional level of competence in the target language to serve as co-participants with learners in task-oriented groups. The non-native teachers in this study were largely indistinguishable from the native English speaking teachers in terms of their use of reference and repair. The results suggest, for example, that non-native teachers are able to employ what Tarone (1983) and others (Bialystock, 1983; Faerch & Kasper, 1983) have called strategic competence in a variety of discourse settings, and that learners do not therefore suffer from exposure to their non-native teachers. At the same time, it appears that the threshold of strategic competence for learners to employ various repairs in a foreign language usefully may be relatively low. The lowest common denominator in this study, the "intermediate level" learners, comprehensibly requested clarification or expanded their utterances, for example, equally well with their Japanese and native interlocutors.

A further, and related, application for the results is a measure of support for treating English as an international language (Smith, 1981) which does not require (but clearly does not exclude) the input of native speakers. Even though a large number of instructional situations around the world are quite obviously successful examples of content taught and learned by non-natives through the medium of English, there is still considerable controversy about the quality of

language learned from non-natives. This study, limited to the comparison of several forms of repair and reference between native-led and non-native led groups, found no basis for excluding non-native teachers from dyadic exchange on the grounds that their brand of English is somehow a second-rate source of input.

A third implication relates to the choice of tasks for organizing dyadic interaction. The findings show that a variety of tasks can support negotiation and repair, although the quality and extent of negotiation is clearly influenced by the task selected. Because the values of the educational system in which teachers and other planners operate eventually find their way into instructional practice, it may be unreasonable to expect conservative foreign language educational systems to treat teachers and learners as equal partners in task-based interaction designed for classroom settings. The image and practice of teacher-fronted, test-oriented foreign language instruction are especially compelling in Japan, for example, and it is only in the adult (and typically private) foreign language system that teachers and learners begin to think of a foreign language as a medium of interpersonal communication. Indeed, all of the Japanese teachers employed in this study were veterans of both the formal foreign language instructional system, with its emphasis on rote learning and examinations, and of non-traditional routes to fluency in English, including adult classes, English speaking clubs and

educational experiences overseas.

The most effective model for classroom language learning, then, is probably not to be found in traditional language classrooms at all. It is more likely to be found in content-area instruction and social exchanges conducted in non-school environments--at worksites, conferences, meetings and other places in which NNSs gather to obtain expertise, exchange information or solve problems.

This model for the exchange of content can be applied in foreign language classrooms by treating tasks as environments which allow different facets of content-area problems to be explored at different points in the syllabus. Some tasks are demonstrably more appropriate for treating information as a practical resource, others as a theoretical resource. It is entirely possible, for example, to design a syllabus in which teachers initiate a cycle of tasks with relatively undemanding experiential activities allowing for a high level of shared information, move on to activities which make more performance demands on the learner and then conclude with theoretical generalization and explanation. Within limits, the teacher's role can be adjusted to suit cultural expectations--the teacher can, after all, explicitly direct instruction in the dyad (or, for that matter, commission learner-learner groups)--and thus design opportunities to treat content in different ways. The point is that choice of task carries consequences, some of which have been elaborated here, for the kind and quantity of

interaction in which the learner is going to participate.

Implications for Task-based Research

Even though the present discussion is about the application of research to educational practice, there is one final implication of the study which necessarily returns the discussion to the conduct of task-based research. A major problem for anyone undertaking applied research is the development of categories which capture some of the reality of an applied world: teachers, learners, classrooms, tasks, clarification requests, exophoric reference, and so on. In general, the categories in this study reflect distinctions which are virtually identical to those employed by other researchers. It makes some sense to build on a body of published research by appropriate application of its categories and frames of reference rather than pioneer an entirely novel set of categorical distinctions.

Alternative, inductive approaches to generating analytic categories (see, for example, Schwartz, 1980; Gaies, 1983) have at least as much respectability in the tradition of social sciences, however, and should be considered as a useful means of establishing valid markers through the relatively unexplored territory of task-based research. To some extent the qualitative analysis of Chapter 6 was an attempt to move somewhat beyond the currently used descriptive frames. This phase of the study should be considered an extension of hypothesis testing accomplished through quantitative analysis, however, rather than what it

might have been under an entirely different research design--an attempt to build new frames of reference and categories for the study of dyadic interaction between non-native speakers of English.

Further studies of NNS-NNS discourse can stake out a middle ground between the extremes of deductive and inductive approaches to treatment of data. They can, for example, start with some rather broad categories which have grown out of empirical research or others' attempts at model-building, construct a set of narrower categories on the basis of a qualitative study and then go on to suggest or test a manageable set of hypotheses. The simple, two-dimensional framework outlined in this study, itself based on a two-factor activity framework for educational settings, can accommodate a variety of novel categories which have yet to be developed in future observational research. The notion of complementary task structures can be used to select rough observational boundaries and allocate behavioral categories which emerge during analysis of conversational data. The framework itself can be validated; it should certainly be modified to allow for more accurate description of discourse in educational settings.

Conclusion

The limitations and implications of the study present an outline of areas into which others may extend their own research. The role of classroom teachers in this prospective research process has only been implied; it ought

to be made explicit. Considering the responsibility and central position of teachers in foreign language education, there are very few others who are in a better position to pose good questions about their work, to seek an understanding of the verbal processes which occur within their classrooms or in related experimental settings and to offer explanations with a basis in the reality of professional practice. If this study has helped foreign language teachers to view their teaching from a fresh perspective it will have fulfilled one of its goals. If, in addition, it encourages teachers to examine their work from a research perspective, it will have achieved an unanticipated bonus.

The focus of the study has been sharpened by the availability of conceptual thinking accomplished by others. The debt is recognized and a hope expressed that the study will prove to be of both technical and conceptual value to others in their pursuit of solutions to problems in language education.

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APPENDICES (A-K)

ask for feedback and clear up any point during the conversations. It is most important that you try to get the most out of these talks: The teacher will be giving you information and is ready and willing to help you, but you will have to do your best to communicate too.

I do appreciate your help if you can spare the time. We should be able to finish all testing and conversations in a total time of one hour and 45 minutes. I think you will find the experience to be an excellent form of practice and a way of learning what your level is.

If you would like to participate, please call me within the next two weeks at the telephone number listed above. In addition, feel free at any time to call me with any questions you may have.

Finally, I want everyone to know that you may freely decide not to participate and that you can freely withdraw from the project at anytime. Your help on the project will be entirely voluntary and confidential. And, if you do decide not to participate, or to withdraw, it will not be held against you in any way.

YOROSHIKU ONEGAI SHIMASU!

Appendix C

Statement of Informed Consent

I consent to participation in the research project, "The Effect of Task Variation in Teacher-led Groups on Repair of English as a Foreign Language" conducted by Richard Berwick, Kobe University of Commerce.

I understand that the main purposes of the project are to examine 1) how various conversational situations influence the kind of verbal assistance participants offer to each other and 2) if the assistance depends on whether a group is mixed (native English and Japanese) or homogeneous (Japanese only).

I also understand that I will be working with one other participant in a two-member group, that our group will engage in five brief (5-7 minute) conversations totaling about one hour with breaks, and that the conversations will be recorded for later analysis. My total participation time, including necessary briefings or English proficiency tests and the conversations, will be less than one hour and 45 minutes. The five situations include a formal discussion, a demonstration, two model reconstruction tasks and a period of informal discussion, in addition to an opportunity to evaluate the tasks immediately after they have been completed.

Mr. Berwick has assured me that my identity will remain confidential (that my name will not be used during analysis of data and reporting of results). He has also offered to answer any further questions I may have about the study and its procedures in order to ensure my full understanding.

Mr. Berwick has also informed me that I may refuse to participate in the study, that my services may be withdrawn at any time for any reason I choose and that such withdrawal will in no way be held against me.

Finally, I acknowledge receipt of a copy of this statement, including all attachments.

DATE

SIGNATURE

Appendix D

English Language Proficiency Tests

Used to Select Subjects

1. The CELT - Comprehensive English Language Test (see Harris & Palmer, 1986b; Oxford, 1987).

The CELT (Structure Section) is a 75-item test of English language proficiency designed for high school, college and adult learners of ESL/EFL at intermediate and advanced levels. Kuder-Richardson 20 reliabilities (Form A) range from .88 to .96 for the six reference groups used to establish test norms. The Structure Section emphasizes the solution of grammar problems in a conversational context. The examinees are asked to choose the word or phase a native speaker of English would use in the conversation and then to mark the answer sheet with the correct answer. Two examples of the test questions follow (see Harris & Palmer, 1986b, p. 11).

Example I: "How old is George?"

"He's two years younger _____ his brother Paul."

- (A) that
- (B) of
- (C) as
- (D) than (x)

Example II: "Have you finished the report for Mr. Jones?"

"Yes, I _____ this morning."

- (A) it to him gave
- (B) gave it to him (x)
- (C) to him gave it
- (D) gave to him it

No overall reliability estimate is provided nor are norms reported specifically for Japanese learners of English as foreign language. Oxford (1987) concludes:

In sum, the authors have created a test that is reliable, valid, and useful for nonnative speakers of English. The test appears to measure English language proficiency in a way that is easy to administer and score. More work on norming would make the test more useful. (p. 24)

2. The LPI - Language Proficiency Interview (see Educational Testing Service, 1982; Lowe, 1987).

The LPI, also known as the FSI (Foreign Service Interview) and the ILR (Interagency Language Roundtable Oral Proficiency Interview), is a test of an individual's ability to converse in a foreign language in an interview situation. The manual (see Educational Testing Service, 1982) provides the following description:

The interview consists of a face-to-face conversation with one or two trained testers for a period of 10 to 30 minutes. The resulting speech sample is then rated on a scale of 0 (for no practical ability to function in the language) to 5 (for ability equivalent to that of an educated native speaker) with plus ratings for strong performance within a level.

Examinees are guided through several stages during the interview. Following a warm-up, questions are designed to establish an initial level (based on a description of

function, content and accuracy for each of the five levels), probe at the next highest level or until the examinee is unable to offer sustained responses, and then return to the level at which the examinee is able to respond.

The manual notes that the oral interview was developed to overcome the difficulty of producing valid assessments of oral production with paper-and-pencil tests (p. 9), and argues that such tests, given the oral assessment goal, lack both content validity and face validity.

Lowe (1987) points out that "the test is not an instrument because the procedure is neither fixed in print nor invariable" (p. 46). Lowe also reports a high degree of inter-rater reliability for the test (Pearson product-moment correlations exceeding .87), and notes that the content validity of the interview depends on the trained interviewer's ability to employ question types or oral tasks which are appropriate for examinees at different levels of proficiency. Lowe cites Bachman and Palmer (1981) who found convergent and discriminant validity for "their version of the oral interview procedure" (p. 46), and notes that the procedure possesses a high degree of face validity.

Appendix E

Instructions to Raters and Index of Dependent Variables

RATING CASES OF CONVERSATIONAL REPAIR AND REFERENCE

I have listed below typical examples of how repair and reference look in context. You will be rating only seven of the 14 types listed; you need read only the seven which are headed with an asterisk (*).

FIRST--Please read the examples below in order to get a feel for each type. You will find the following information for each example: (a) an index number in parentheses for the item, (b) a name, (c) a brief description and (d) the conversational excerpt within which the repair or reference occurs. (Information in the square brackets following each excerpt refers to the transcript in which it occurs and has no bearing on your rating.)

SECOND--Once you have read the examples, you can go on to the next five pages. I have listed 21 excerpts from transcripts of conversations between a teacher and a learner. Note that each excerpt exemplifies only one form of repair or reference, which is underlined.

After reading each excerpt, please decide which kind of repair or reference it illustrates.
Then, write the index number for the repair or reference in the space provided. The seven repair and reference categories, and their index numbers, have been reproduced for you at the top of each rating sheet.

NOTE THE FOLLOWING EXAMPLES

(1) Clarification Request: The listener indicates lack of understanding through an implied or explicit request for the speaker to expand or reformulate an utterance.

CAN YOU FIND THAT PIECE?

+++ I beg your pardon?

[2LEG1]

*(2) Comprehension Check: A speaker checks whether the listener has understood the utterance.

BUMPS IS A KIND OF SMALL, UH, LIKE A CIRCLE. - CIRCLE,
'S A LITTLE BIT ELEVATED - CIRCLE, OKAY?

[8LEG1]

*(3) Confirmation Check: A speaker requests confirmation that the previous utterance has been heard correctly by repeating a word or phrase from the utterance and adding rising intonation.

Where?

UHH, ++ STARTING ON THE SECOND LINE---.

Second line?

[10LEG2]

(4) Definition: A speaker states what a word or phrase means, either in response to or in anticipation of the listener's lack of comprehension; the definition typically takes the form "A is a (type of) B".

THAT'S IT. A STRING IS JUST A THICK PIECE OF
THREAD--- BUT IN, IN COMPU--- UH,
/rib - ribbon. ribbon. No.
COMPUTER DOESN'T HAVE A RIBBON.

[2COM1]

*(5) Display Question: Requests the listener to demonstrate knowledge or information already possessed by the speaker and known by the listener to be possessed by the speaker. The "display" may also take the form of a rhetorical question which is answerable by the speaker who poses it.

APPEARING - ONE LETTER BEFORE [emph] T-H-E. SEE? - SO
WHY DON'T WE KEEP- ++ IN ORDER TO FIND ANOTHER T-H-E
WHAT SSSHALL I DO?

[8COM2]

(6) Echo: Exact complete or (typically) partial repetition, with flat or falling intonation, of the preceding speaker's utterance.

MHMM. NOW PRESS THE ONE THAT GOES DOWN.

Down---

[2COM2]

*(7) Lexical Uncertainty: Hesitant or tentative attempt to recall or properly employ a particular word; often characterized by repetitive production of incomplete or incorrect forms of the lexical item.

uh, I - I- I held - I h- uh, I held - the sp- uh- - oratorical contest, - and I took- the management - of that contest.

[8DIS]

*(8) Referential Question: A means of eliciting information which is unknown and of interest to the speaker, and which may be possessed by the hearer. Referential questions are oriented to the topic rather than to the quality of language by which the topic is expressed.

UM - I THINK KOCHI IS FAMOUS FOR - UH ++ FIGHTING DOGS.

Ahhh!

UH - WHAT - WHAT DO YOU CALL THEM?

[2DIS]

(9) Self-expansion: Partial or complete rephrasing of one's own utterance, often occurring within the speaker's turn but possibly occurring within the speaker's next turn. (The ">" indicates the referential point for the expansion.)

YES, THAT ONE- AND THEN - >PUT IT - ON THAT - - THE LONGER ONE. + PUT THE SQUARE ONE ON THE LONG- LONG ONE---.

[10LEG2]

(10) Self-repetition: Exact, partial or semantic (equivalent) repetition of one's previous utterance within five turns of that utterance. The self-repetition frequently occurs within the speaker's own turn. (The ">" indicates the referential point for the repetition.)

YEAH + UMMM ++ LET'S JUST TRY THAT. YEAH >JUST TRY IT THERE. LET'S JUST TRY IT THERE. WE'LL BE CREATIVE WITH THIS THING.

[3LEG2]

(11) Other-expansion: Partial rephrasing of the previous speaker's utterance. Rephrasing typically includes new material in addition to the repetition. (The ">" indicates the referential point for the expansion.)

I SEE IT ON PEOPLE'S FRONT DOORS OR ON THEIR CAR.

/Yes, we put on cars
OR ON THE FRONT OF THE CAR. IS IT FOR >GOOD LUCK FOR

/Ah
THE NEW YEAR FOR THE ++ DRIVING, OR
/yes

Yeah. It means the celebration or good luck. Um, I think.

[12DIS]

(12) Other-repetition: Exact, partial or semantic repetition of the previous speaker's utterance within five turns of the utterance. (The ">" indicates the referential point for the repetition.)

Uh, not inside. So, in front of the gate.

UH HUH. I SEE, GATE. YOU SAID GATE. UM HM.

[12DIS]

*(13) Anaphoric Reference: Anaphoric reference points back to something concretely identified at a previous point in the text. Anaphora typically takes the form of a pronoun (thus, >BOOK . . . IT). IT cannot be interpreted without identification of the referential source (">").

SO. ARE ALL OF THE >PIECES TURNED RIGHT SIDE UP?
(/Mhmm./)

Yes, yes they are.

[2LEG1]

*(14) Exophoric Reference: Exophoric reference points out objects or relationships in the conversational context. It is entirely context-bound and ordinarily cannot be interpreted without shared perception or experience. The text does not show a prior concrete referent for an exophoric pronoun.

TO THE RIGHT. ++ YEAH! AND DOWN! ONE- ONE--- - YEAH,
DOWN! BEAUTIFUL!

Ah!

THAT'S [emph] THE ONE I WANT.

[8LEG2]

Comprehension Check (2)	Referential Question (8)
Confirmation Check (3)	Anaphoric Reference (13)
Display Question (5)	Exophoric Reference (14)
Lexical Uncertainty (7)	

NOW PLEASE RATE THE FOLLOWING EXCERPTS
BY FILLING IN THE APPROPRIATE NUMBER

Write the appropriate index number on the line to the right
of each excerpt. For example:

THAT'S [emph] THE ONE I WANT.

14

[8LEG2]

<< 1 >>

YOU UNDERSTAND?

Yes, yes, yes. Hm.

OKAY. ++ DID YOU GET IT?

[6LEG1]

<< 2 >>

WHEN WE WERE GOING THROUGH, I SHOULD HAVE STOPPED YOU AT TWO
POINTS. WE HAD THE WORD, "THEORY", T-H-E-O-R- - I-E-S. WHY
DID IT STOP AT THE WORD, "THEORY"? BECAUSE WE TYPED IN
T-H-E, BUT WE DIDN'T LEAVE A SPACE IN FRONT OR A SPACE IN
(/Hnn./)

BACK, SO WHAT WE DID JUST NOW WAS TO TYPE IN THE LETTERS, -

[4COM2]

<< 3 >>

NEXT TO IT. RIGHT NEXT TO IT. THAT'S IT. YEAH. - AND THEN
- HMMM. THIS IS A - THE NEXT ONE IS VERY COMPLICATED. TAKE
TWO PIECES - OF UHHH - YELLOW BUMPS, PLEASE.

/Two pieces?

What kind of?

[9LEG2]

Comprehension Check (2)
Confirmation Check (3)
Display Question (5)
Lexical Uncertainty (7)

Referential Question (8)
Anaphoric Reference (13)
Exophoric Reference (14)

<< 4 >>

THAT'S GOING TO GO ONN- THEEE - SSECOND SSET + OF POINTS.
/second---?

Second?

THE SECOND SET.

[7LEG2]

<< 5 >>

THEN FILE "A" BUTTON, FILE "B" BUTTON, FILE "C" BUTTON AND
THEN - THE ENTIRE DIFF, DIFFERENTLY, ENTIRELY DIFFERENT
MANUSCRIPT APPEARS JUST LIKE MAGIC. YOU WILL LOVE IT.

[10COM1]

<< 6 >>

YOU DO THAT?

Put it on - where?

YEAH, IN THE NEXT [emph] STAGE.

[8LEG2]

<< 7 >>

Ohh, ohh, I see, I see..

OKAY? - PY- LIKE A PYRAMID.

Okay.

[10LEG]

<< 8 >>

SO WHAT ABOUT UH "T-H-E" THIS TIME? BUT, UH, BEFORE THAT, WE
HAVE TO PUT, UH, BUTTON, OK, THAT ONE. DO YOU REMEMBER THE
/mmm
BUTTON YOU PRESS? OK, THAT ONE. YES THIS ONE.

[6COM2]

Comprehension Check (2)
Confirmation Check (3)
Display Question (5)
Lexical Uncertainty (7)

Referential Question (8)
Anaphoric Reference (13)
Exophoric Reference (14)

<< 9 >>

THERE'S A BLACK PIECE WITH A KIND OF ANTENNA.

Antenna?

D'YOU SEE IT?

[4LEG1]

<< 10 >>

THAT ONE.

This?

OKAY, YEAH. - RIGHT THERE. THAT'S RIGHT. YOU'RE VERY SMART.

[6LEG2]

<< 11 >>

OKAY. SO, THE NEXT--- CAN YOU FIND - A SQUARE BOARD?

Square board--- Mm.

OKAY, UH, WITH- ONE TWO THREE FOUR FIVE SIX SEVEN EIGHT NINE
TEN TWELVE, OKAY, TWELVE BUMPS ON IT. IT IS - BLACK COLOR.

[6LEG1]

<< 12 >>

YEAH. I LIKED KOCHI AND I WAS A LITTLE BIT - SURPRISED.

Ah! On what point?

WELL, BEFORE I WENT TO SHIKOKU, I TOLD SOME OF MY FRIENDS
THAT I WAS GOING TO SHIKOKU, AND THEY SAID, "SHIKOKU! AH!"

[2DIS]

<< 13 >>

We're understand.

OKAY, YOU UNDERSTAND, OKAY? + OKAY, SO NOW YOU HAVE THREE -

[6LEG1]

Comprehension Check (2)
Confirmation Check (3)
Display Question (5)
Lexical Uncertainty (7)

Referential Question (8)
Anaphoric Reference (13)
Exophoric Reference (14)

<< 14 >>

THE- COME THIS WAY. COME TOWARDS ME. BRING YOUR HAND -
THA- - NEXT TO THAT. + THAT'S RIGHT. + THAT'S IT.

[4LEG2]

<< 15 >>

YE - UHHH, I THINK- GRAY [emph]

Ah, gray?

YEAH, - GRAY. (3) MAYBE WOULD YOU TURN IT DOWN? TURN

[8LEG2]

<< 16 >>

JUST EXPERIMENT. ++ WHY - WHY DON'T YOU MAKE IT GO - OVER -
HERE? PUT IT IN THE - UH - NOW WHAT DOES THAT SAY THERE?

Mmm---

NEED DO. MAKE IT GO TO NEED DO. THAT'S IT.

[2COM2]

<< 17 >>

OKAY, THEN, UH, PLEASE FIND, UH, THE LONNNG + UH, WHITE
BOARD WITH - 1, 2, 3, 4, 5, 6, 7, 8!

Ah! Yes, I see.

/8 BUMPS. + DID YOU FIND IT?

[8LEG1]

<< 18 >>

PLEASE, YEAH. - UH -, NO, - THE BLACK PIECE, PLEASE.

Black?

+ YEAH, THAT'S IT. - AND PUT IT + UHHH, YEAH.

[9LEG2]

Comprehension Check (2)
Confirmation Check (3)
Display Question (5)
Lexical Uncertainty (7)

Referential Question (8)
Anaphoric Reference (13)
Exophoric Reference (14)

<< 19 >>

THINK IT MIGHT BE CLOSE + IS THAT IT? OR IS THAT THE ONE
YOU---

This is not--- + this one?

[2LEG2]

<< 20 >>

Hahhh! At that time, in you - how - what place did
you - - visit - - visit- for the trip?

[6DIS]

<< 21 >>

IN - ON THAT PAGE. NOW. AT THE TOP OF THE + OF THE +
BARS, THERE ARE - FIVE BUTTONS.

[4COM1]

Appendix F

Transcription Conventions

Most of the following conventions have been adopted from Brown & Yule (1983b).

1. Pauses:

- a very brief pause (about 1/2 sec.)

+ a short pause (about 1 sec.)

++ a long pause (about 1 1/2 sec.)

(4) for pauses of two seconds or longer, estimated number of seconds is in parentheses

2. The point of overlapping speech is represented by a slashed line:

Four bumps with square bumps? Ah hah. Mm
/FOUR BUMPS. OH, THAT'S IT. BIG, OK.

3. Omitted and unclear segments:

For words not heard clearly - ?WORD

For words and which cannot be guessed - ??? WORD

For words and phrases cut short by speaker - WORD---

3. Other:

Rising intonation - WORD?

Inbreath - ^SHHH

Outbreath - 'HAAA

Lengthened sounds - SSSSO. UHHHH.

Transcriber's comments - [emph]

4. Spacing of transcribed text:

Single spaced for continuous or overlapping speech.

Double spaced between turns.

Appendix G

ANOVA F ratios for Selected

Transformed and Untransformed Variables

Listed in Table 3

Treatment of dependent variable by
transformation (Group/Task)

Dependent variable	square root	logarithmic	untransformed
Comprehension check	.07 12.53	.09 12.74	.04 11.19
Confirmation check	.32 13.99	.68 12.68	.18 11.68
Definition	2.10 3.77	2.22 4.00	1.90 3.43
Exophoric reference	.12 49.18	.07 30.73	.00 48.11
Other- repetition	.33 2.46	.11 2.71	.53 2.21
Self- repetition	.32 9.30	.50 10.33	.17 7.83
Echo	.26 4.67	.26 4.20	.30 4.46

Note. F ratios are listed first by group and then by task
for each dependent variable

Appendix H

Significant Repair Categories and Sources of Variance for Experiential and Expository Tasks Using LEG1 as the Expository Stem

ANOVA						
Repair exponent	EXPER-EXPOS1		EXPER-EXPOS2		Main sources of variance (p <)	
	<u>F</u> ratio	<u>p</u>	<u>F</u> ratio	<u>p</u>	.05	.01
Comp. check	14.533	.0034			EY > EL	EY > EL
			18.343	.0016	EY > EL	EY > EL
Display question	65.681	.0001	-	-	EL > EY	EL > EY
					-	-
Lexical uncert.	5.912	.0354			H > M	-
			12.707	.0051	H > M	-
	17.962	.0017			EY > EL	EY > EL
			11.942	.0062	EY > EL	EY > EL
	5.293	.0442			at EXPOS1: H > M at EXPER1 H > M	
			-	-		
Self- repair	4.179	.0682			-	-
			4.166	.0685	-	-

Note. Groups: M = Mixed, H = Homogeneous; Tasks: EL =
Experiential, EY = Expository; df = 1 in all cases

Appendix I

ANOVA Tables Comparing

Expository with Experiential Tasks

(COM1 vs. LEG2 + COM2)

Table I-1

Analysis of Variance for Clarification Requests

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	37.500	37.500	11.125	.0075	
Error	10	33.708	3.371			
Task	1	7.042	7.042	1.366	.2696	
G x T	1	.667	.667	.129	.7266	
Error	10	51.542	5.154			1.00

Table I-2

Analysis of Variance for Confirmation Checks

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	.260	.014	.014	.9093	
Error	10	190.771	19.077			
Task	1	106.260	106.260	8.360	.0161	
G x T	1	3.010	3.101	.237	.6370	
Error	10	127.104	12.710			1.00

Table I-3

Analysis of Variance for Definitions

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	1.500	1.500	1.094	.3202	
Error	10	13.708	1.371			
Task	1	7.042	7.042	5.768	.0372	
G x T	1	.000	.000	.000	1.0000	
Error	10	12.208	1.221			1.00

Table I-4

Analysis of Variance for Expressions of Lexical Uncertainty

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	1.260	1.260	.437	.5236	
Error	10	28.854	2.885			
Task	1	29.260	29.260	14.989	.0031	
G x T	1	.844	.844	.432	.5257	
Error	10	19.521	1.952			1.00

Table I-5

Analysis of Variance for Referential Questions

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	16.667	16.667	1.555	.2408	
Error	10	107.167	10.717			
Task	1	253.500	253.500	28.324	.0003	
G x T	1	6.000	6.000	.670	.4320	
Error	10	89.500	8.950			1.00

Table I-6

Analysis of Variance for Self-Repetition

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	60.167	60.167	.597	.4574	
Error	10	1007.042	100.704			
Task	1	1.042	1.042	.039	.8473	
G x T	1	181.500	181.500	6.805	.0261	
Error	10	266.708	26.671			1.00

Appendix J

ANOVA Tables Comparing

Expository with Experiential Tasks

(COM1 vs. LEG2)

Table J-1

Analysis of Variance for Clarification Requests

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	37.500	37.500	7.895	.0185	
Error	10	47.500	4.750			
Task	1	13.500	13.500	2.462	.1477	
G x T	1	.667	.667	.122	.7346	
Error	10	54.833	5.483			1.00

Table J-2

Analysis of Variance for Confirmation Checks

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	1.042	1.042	.025	.8782	
Error	10	421.083	42.108			
Task	1	442.042	442.042	14.426	.0035	
G x T	1	.042	.042	.001	.9713	
Error	10	127.104	12.710			1.00

Table J-3

Analysis of Variance for Definitions

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	.375	.375	.220	.6495	
Error	10	17.083	1.708			
Task	1	12.042	12.042	10.865	.0081	
G x T	1	.375	.375	.338	.5737	
Error	10	12.208	1.221			1.00

Table J-4

Analysis of Variance for Expressions of Lexical Uncertainty

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	1.500	1.500	.545	.4772	
Error	10	27.500	2.750			
Task	1	28.167	28.167	12.707	.0051	
G x T	1	.667	.8667	.301	.5954	
Error	10	22.167	2.217			1.00

Table J-5

Analysis of Variance for Referential Questions

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	5.042	5.042	.287	.6036	
Error	10	175.417	17.542			
Task	1	630.375	630.375	44.471	.0001	
G x T	1	18.375	18.375	1.296	.2814	
Error	10	141.750	14.175			1.00

Table J-6

Analysis of Variance for Self-Repetition

Source of variation	<u>df</u>	Sum of squares	Mean square	<u>F</u>	<u>p</u>	Epsil. corr.
Group	1	16.667	16.667	.117	.7395	
Error	10	1425.667	142.567			
Task	1	6.000	6.000	.169	.6897	
G x T	1	294.000	294.000	8.282	.0164	
Error	10	266.708	26.671			1.00

Appendix K

Means and Standard Deviations for Mixed- and Homogeneous-group Tasks

Table K-1

Means and Standard Deviations for Mixed-group Tasks

Variable	Task				
	COM1	COM2	DIS	LEG1	LEG2
	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>
Anaphoric reference					
dyad	33.67 3.78	31.33 11.84	40.83 20.02	41.83 17.79	42.50 7.79
teacher	36.17 4.45	30.33 11.43	29.167 16.38	38.17 15.74	41.50 7.84
learner	2.50 2.67	1.00 1.27	11.67 6.98	3.67 3.27	1.00 .89
Clarification request					
dyad	3.67 2.16	4.00 3.41	1.17 1.33	5.50 1.87	4.83 3.43
teacher	1.00 2.45	1.33 3.27	.17 .41	.50 .84	.50 .84
learner	2.67 2.25	2.67 3.08	1.00 1.27	5.00 1.90	4.33 3.01
Comprehension check					
dyad	2.67 2.73	.83 .75	.17 .41	5.00 4.34	.83 .75
teacher	2.67 2.73	.83 .75	.00 .00	5.00 4.34	.83 .75
learner	.00 .00	.00 .00	.17 .41	.00 .00	.00 .00

table continues

Table K-1 (cont'd.)

Means and Standard Deviations for Mixed-group Tasks

Variable	Task				
	COM1	COM2	DIS	LEG1	LEG2
	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>
Confirmation check					
dyad	3.5	4.33	4.00	7.33	12.00
	2.35	2.50	4.43	1.97	10.26
teacher	.33	.33	2.83	.50	.17
	.82	.52	4.92	.84	.41
learner	3.17	4.00	1.17	6.83	11.83
	2.40	2.83	1.17	2.40	10.48
Definition					
dyad	2.00	1.50	1.00	.67	.33
	1.27	1.38	1.55	.82	.82
teacher	1.67	1.33	1.00	.67	.33
	1.37	1.37	1.55	.82	.82
learner	.33	.17	.00	.00	.00
	.52	.41	.00	.00	.00
Display question					
dyad	5.67	9.33	2.00	.33	1.00
	2.66	3.56	3.16	.82	1.67
teacher	5.67	9.33	1.83	.33	1.00
	2.66	3.56	2.86	.82	1.67
learner	.00	.00	.17	.00	.00
	.00	.00	.41	.00	.00
Echo					
dyad	7.67	8.83	4.17	5.50	7.33
	1.75	4.02	2.48	4.76	4.18
teacher	.33	.17	.50	.33	.17
	.52	.41	.55	.52	.41
learner	7.33	8.67	3.67	5.17	7.17
	1.37	4.03	2.42	4.88	4.07

table continues

Table K-1 (cont'd.)

Means and Standard Deviations for Mixed-group Tasks

Variable	Task				
	COM1	COM2	DIS	LEG1	LEG2
	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>
Exophoric reference					
dyad	1.67	21.83	4.83	1.50	57.83
	1.63	7.14	7.47	1.38	21.78
teacher	1.17	19.50	2.50	.33	42.17
	1.47	6.89	3.99	.52	18.85
learner	.50	2.33	2.33	1.17	15.67
	.84	1.63	3.93	1.17	8.12
Lexical uncertainty					
dyad	2.17	.67	3.67	1.00	.33
	1.17	.52	2.25	1.27	.52
teacher	1.17	.67	.83	.17	.17
	1.33	.52	.75	.41	.41
learner	1.00	.00	2.83	.83	.17
	1.27	.00	2.32	1.17	.41
Other- expansion					
dyad	4.00	2.67	5.00	6.17	2.67
	3.58	3.27	4.00	3.37	1.86
teacher	2.00	2.00	2.50	3.33	1.67
	1.79	3.10	2.43	2.66	1.51
learner	2.00	.67	2.50	2.83	1.00
	2.10	.52	2.07	1.60	1.27

table continues

Table K-1 (cont'd.)

Means and Standard Deviations for Mixed-group Tasks

Variable	Task				
	COM1	COM2	DIS	LEG1	LEG2
	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>
Other-repetition					
dyad	4.67 1.51	7.00 4.65	7.50 3.78	6.83 3.49	4.50 2.35
teacher	2.00 1.41	2.83 1.94	3.83 1.47	3.00 1.10	2.67 1.63
learner	2.67 1.21	4.17 3.66	3.67 2.81	3.83 3.43	1.83 2.40
Referential question					
dyad	.83 .75	4.67 5.13	17.17 4.75	10.50 5.58	12.83 4.62
teacher	.17 .41	2.83 4.07	11.00 5.76	5.83 3.31	5.00 5.59
learner	.67 .82	1.83 2.14	6.17 4.67	4.67 3.88	7.83 7.20
Self-expansion					
dyad	29.50 9.52	24.83 11.02	21.17 6.31	26.83 9.81	36.67 20.77
teacher	26.83 8.64	23.33 10.46	12.83 5.71	24.33 9.40	28.67 11.31
learner	2.67 2.66	1.50 1.23	8.33 3.33	2.50 1.87	8.00 16.77

table continues

Table K-1 (cont'd.)

Means and Standard Deviations for Mixed-group Tasks

Variable	Task				
	COM1	COM2	DIS	LEG1	LEG2
	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>
Self-repetition					
dyad	25.50 5.61	29.83 8.26	16.33 9.93	33.50 10.75	24.50 12.50
teacher	22.83 7.78	27.00 6.72	10.83 9.20	21.50 12.99	32.67 11.15
learner	2.67 3.67	2.83 2.56	5.50 3.15	3.00 2.37	.83 .75

Note. n = 6 for all mixed dyads.

Table K-2

Means and Standard Deviations for Homogeneous-group Tasks

Variable	Task				
	COM1	COM2	DIS	LEG1	LEG2
	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>
Anaphoric reference					
dyad	27.50 18.26	18.67 7.82	30.50 13.55	45.00 12.99	39.17 16.25
teacher	22.17 16.38	16.00 5.25	20.17 12.07	38.00 10.24	36.17 13.38
learner	5.33 5.01	2.67 2.66	10.33 6.77	7.00 5.76	3.00 3.63
Clarification request					
dyad	.83 .75	1.83 1.47	1.17 1.94	4.50 2.88	2.67 1.86
teacher	.00 .00	.17 .41	.33 .52	.50 .84	.50 1.23
learner	.83 .75	1.67 1.63	.83 1.60	4.00 2.61	2.17 .98
Comprehension check					
dyad	1.00 1.10	2.67 2.58	.00 .00	5.50 3.21	1.17 1.17
teacher	1.00 1.10	2.67 2.58	.00 .00	5.50 3.21	1.17 1.17
learner	.00 .00	.00 .00	.00 .00	.00 .00	.00 .00

table continues

Table K-2 (cont'd.)

Means and Standard Deviations for Homogeneous-group Tasks

Variable	Task				
	COM1	COM2	DIS	LEG1	LEG2
	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>
Confirmation check					
dyad	3.83	2.33	1.33	7.33	12.33
teacher	4.26	2.07	2.07	3.39	4.08
learner	.17	.50	.50	.17	.33
	.41	.84	1.23	.41	.52
	3.67	1.83	.83	7.17	12.00
	3.93	2.14	1.60	3.06	3.90
Definition					
dyad	1.33	.50	.00	.83	.33
teacher	1.75	.55	.00	.98	.82
learner	1.33	.50	.00	.83	.33
	1.75	.55	.00	.98	.82
	.00	.00	.00	.00	.00
	.00	.00	.00	.00	.00
Display question					
dyad	4.00	12.67	2.33	.50	3.17
teacher	3.80	3.45	3.33	.55	4.58
learner	4.00	12.33	2.17	.50	3.00
	3.80	3.45	3.37	.55	4.69
	.00	.33	.17	.00	.17
	.00	.52	.41	.00	.41
Echo					
dyad	9.50	8.67	2.67	8.00	7.67
teacher	5.36	3.77	2.58	2.37	4.08
learner	.33	3.33	1.17	.67	.00
	.52	5.35	1.47	.82	.00
	9.17	5.33	1.50	7.33	7.67
	5.53	3.39	1.38	2.25	4.08

table continues

Table K-2 (cont'd.)

Means and Standard Deviations for Homogeneous-group Tasks

Variable	Task				
	COM1	COM2	DIS	LEG1	LEG2
	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>
Exophoric reference					
dyad	10.17 16.65	21.67 3.67	1.33 1.97	3.00 3.80	51.17 15.04
teacher	8.33 14.67	16.00 4.52	.83 .93	1.83 3.60	38.83 12.21
learner	1.83 2.99	5.67 5.09	.50 1.23	1.17 2.40	12.33 8.17
Lexical uncertainty					
dyad	3.00 2.83	.83 .98	3.00 2.28	2.67 1.03	.50 .55
teacher	1.17 1.94	.50 .84	.67 .52	1.33 1.37	.50 .55
learner	1.83 2.23	.33 .52	2.33 2.07	1.33 1.63	.00 .00
Other- expansion					
dyad	4.50 3.78	4.50 3.45	6.50 3.39	5.00 3.16	5.50 4.32
teacher	2.17 1.72	2.83 2.79	4.17 2.04	2.83 2.79	3.00 2.19
learner	2.33 2.94	1.67 1.03	2.33 2.16	2.17 1.33	2.50 2.51
Other- repetition					
dyad	7.17 6.43	9.17 5.00	6.83 5.64	7.83 4.17	4.17 3.43
teacher	4.00 3.29	5.67 2.58	3.33 2.25	4.67 2.25	3.83 3.19
learner	3.17 3.31	3.50 2.59	3.50 3.51	3.17 2.99	.33 .52

table continues

Table K-2 (cont'd.)

Means and Standard Deviations for Homogeneous-group Tasks

Variable	Task				
	COM1	COM2	DIS	LEG1	LEG2
	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>	Mean <u>SD</u>
Referential question					
dyad	3.50	6.00	13.33	13.17	12.00
	2.88	4.19	8.38	6.40	5.72
teacher	.50	1.83	10.83	9.33	2.00
	1.23	1.47	8.98	7.71	2.68
learner	3.00	4.17	2.50	3.83	10.00
	2.83	4.02	3.73	3.76	4.15
Self-expansion					
dyad	25.50	19.50	19.67	22.17	20.33
	3.15	5.72	5.24	6.91	5.13
teacher	20.83	17.33	10.83	21.00	20.33
	6.43	5.54	6.56	6.78	5.13
learner	4.67	2.17	8.83	1.17	.00
	4.13	2.32	6.49	1.33	.00
Self-repetition					
dyad	34.17	28.33	12.00	28.17	21.50
	8.28	11.74	3.41	11.86	7.82
teacher	27.83	26.33	7.67	18.17	28.00
	11.57	11.41	4.59	7.25	11.97
learner	6.33	2.00	4.33	3.33	.17
	4.68	1.79	3.83	2.94	.41

Note. n = 6 for all homogeneous dyads.