LANGUAGE TRANSFER IN LANGUAGE LEARNING

LANGUAGE ACQUISITION & LANGUAGE DISORDERS

Volume 5

Susan M. Gass and Larry Selinker (eds)

Language Transfer in Language Learning

LANGUAGE TRANSFER IN LANGUAGE LEARNING

REVISED EDITION

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JOHN BENJAMINS PUBLISHING COMPANY
AMSTERDAM/PHILADELPHIA

Library of Congress Cataloging-in-Publication Data

Language transfer in language learning / edited by Susan M. Gass and Larry Selinker.
p. cm. -- (Language acquisition and language disorders, ISSN 0925-0123; v. 5)
Includes bibliographical references.
1. Language transfer (Language learning) 2. Interlanguage (Language learning) 3. Second language acquisition. I. Gass, Susan M. II. Selinker, Larry, 1937- . III. Series.
P118.25.L36 1992
401'.93 -- dc20 92-23741
ISBN 90 272 2469 2 (Eur.) / 1-55619-241-X (US) (Hb.; alk. paper) CIP
ISBN 90 272 2476 5 (Eur.) / 1-55619-248-7 (US) (Pb.; alk. paper)

Reprinted with corrections: 1994

John Benjamins Publishing Co. · P.O. Box 75577 · 1070 AN Amsterdam · The Netherlands
John Benjamins North America · 821 Bethlehem Pike · Philadelphia, PA 19118 · USA

To the memory of S. Pit Corder

whose contributions have greatly influenced this book as well as much of the thinking in the field of Second Language Acquisition

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Preface

This volume of studies on Language Transfer presents an array of approaches to this important subarea of second language acquisition. As is detailed in the introduction to this book, the study of the influence of the native language has undergone significant changes over the past few decades. Yet, despite the changes in importance attached to language transfer, it has emerged as an area of study central to the entire discipline of second language acquisition.

A prior book on Language Transfer (1983) formed the impetus for this volume. At the time that book appeared, some major rethinking in the field regarding the concept of language transfer was beginning to take place. Since that time, we have seen that same reconceptualization of language transfer take an important place in the field and form the basis for current thinking.

This book, through a mix of reprinted papers from the earlier edition of Language Transfer studies (Corder, Schachter, and Ard and Homburg), revised and updated papers (Broselow, Gundel and Tarone, Bartelt, and Scarcella) and new papers (Jordens, Zobl, Selinker and Lakshmanan, and White), presents the reader with a 'run through history' culminating in a focus on current issues and current theoretical models. The Afterword pulls together many of the concepts current in second language thinking.

There are many to whom thanks are due for their contribution and assistance in putting this volume together. First, we would like to thank the series editors for their faith and encouragement in this project. It is their vision which helped us in our thinking and rethinking of the makeup of this book. Cornelis Vaes from John Benjamins was ever so prompt and patient in his responses to our mundane questions. Our ever-trusting fax machines allowed Mr. Vaes to answer transatlantic questions in a matter of minutes. Finally, India Plough has been the backbone of this project. She has played the major role in getting some of the details worked out both in the content of individual papers and the format for producing this volume. We are indebted to her competence, good naturedness and sense of humour from beginning to end.

Introduction[1]

Susan Gass and Larry Selinker

In 1957 Robert Lado claimed:

> that individuals tend to transfer the forms and meanings, and the distribution of forms and meanings of their native language and culture to the foreign language and culture--both productively when attempting to speak the language and to act in the culture, and receptively when attempting to grasp and understand the language and the culture as practised by natives (p. 2)

This quotation and the work it came from have proved to be influential in the field of second language acquisition. It was the source of hundreds of empirical studies in contrastive analysis (CA) in language contact situations.

Fries (1945:9) formulated the need for contrastive analyses through observations such as:

> The most efficient materials are those that are based upon a scientific description of the language to be learned, carefully compared with a parallel description of the native language of the learner.

These remarks have, in fact, often been quoted to justify the need for a particular contrastive analysis. In 1954, a translation-type model in a generative framework was proposed by Harris; the model was called "transfer grammar." His point was that, whereas in a purely structural comparison of languages:

> many constructions and subdividings had no parallel,...we can find--on a translation basis--a parallel in one language to almost anything in the other. (p.267)

Harris had several purposes in proposing his model, including the supposition that his "method may also be relevant for the learning or teaching of foreign languages" (p.259). Thus, early on, some notion of language transfer had been important to the understanding of how second languages are learned[2].

The field of contrastive analysis, without a doubt, received its major push through a consideration of pedagogical requirements. Lado proposed a potentially rigorous contrastive model, "addressed primarily to the trained

teacher of foreign languages." (1957) In his pioneer effort, which contained a wealth of examples as part of step-by-step procedures for comparing two sound systems, two grammatical structures, two vocabulary systems, two writing systems, and two cultures in contact. These and other developments have been traced in great detail by Dingwall (1964), who himself proposed an alternative model which incorporated a transformational component into the contrastive grammar.

Contrastive analysis was greatly aided by a fundamental assumption which allowed analysts to ignore complexities while achieving impressive results. This assumption is expressed in the quotation cited at the outset of this chapter. Although results obtained through a contrastive analysis are perfectly valid within the framework of this assumption, difficulty does arise from an attempt to interpret the CA hypothesis itself in terms of learner behavior and centers upon the word *tend*. What does it mean, for example, to state that the English-speaking learner of Italian: tends to devoice the first member of the clusters [zm zn zl], and adjust them to the English clusters [sm sn sl] (DiPietro 1964:225). Prediction of learner behavior in contrastive statements such as this one is based, in fact, upon certain observations of some speakers under unspecified conditions. If the word *tend*[3] does not appear in contrastive statements or is removed from their interpretation, these statements are then being used for a purpose which transcends their original framework, the purpose being the prediction of actual second language behavior. This difficulty becomes even more apparent when two (or more) alternatives in the second language are recognized as being open to the learner, e.g., the case of Italian [zb] by the English speaking learner when "either a 'support' vowel is inserted...or both members of the cluster are unvoiced." (DiPietro 1964: 225; emphasis in original). Knowledge of which one of these possibilities is in fact chosen and under what conditions is a prerequisite to a theoretical understanding of the phenomenon. Classical CA statements provided predictive statements without careful descriptive and analytical studies of actual second language learners under clearly specified conditions.

However, contrary to what many researchers have believed, Lado long ago realized that:

> The list of problems resulting from the comparison of the foreign language with the native language...must be considered a list of hypothetical problems until final validation is achieved by checking it against the actual speech of students. (Lado 1957:72, emphasis added)

The importance of this statement was one of the major impetuses which led to experimental investigations of actual second language learner speech behavior (cf.,for example, Selinker 1966).

On the other hand, there were many attempts to apply this principle, stated so well by Lado, which leave much to be desired. Kleinjans (1959), for instance, tested his predictions, thus systematically combining theory with observation, but his psychology is clearly after the fact and is not a part of his experimental design. What Kleinjans did was try to adjust his data to fit Osgood's transfer paradigm and transfer surface model (Osgood 1953, p. 520 ff.). What was not realized at the time was the inapplicability of this design because it is quite impossible to find a control group which rested, i.e., did not learn a native language, while the experimental group learned task A, i.e., the native language. (For a fuller discussion the interested reader is referred to Selinker 1966, footnote 7; 1969:17-18)

In 1962, Moulton made one of the earliest attempts at a general statement in which behavioral observations were added systematically to contrastive analysis statements. For Moulton, two methods of analyzing pronunciation problems in a second language exist: (1) listening to errors, noting them, and arranging them in an order especially designed for learners; and (2) analysis of the phonological structures of the two languages, noting points of agreement and disagreement, and predicting errors on the basis of disagreements. Moulton suggested a combination of the two methods, especially when a consideration of pedagogical purposes was paramount.

While CA statements may at times prove useful for pedagogical purposes, pedagogical needs are not the only ones existing for these analyses. Harris (1954), for example, used CA for machine translation. Diebold (1965) was one of the first who explicitly noted that "for theoretical purposes, continued pursuit of contrastive analyses will greatly increase our knowledge of language universals and typology." (p. 210)

Some researchers (e.g., Fisiak 1980) in the area of contrastive studies have claimed that purely descriptive contrastive analyses, i.e., with no systematized behavioral evidence, should be on an equal footing with other types of linguistic descriptions.

> Contrastive linguistics may be roughly defined as a subdiscipline of linguistics which is concerned with the comparison of two or more languages (or subsystems of languages) in order to determine both the differences and similarities that hold between them. (Fisiak 1980:1)

But in terms of language transfer, DiPietro (1964:224) had earlier stated that contrastive analysis is important "as a preliminary step to understanding the range of transfer from one linguistic structure to another."

For us, one important preliminary step to understanding language transfer is, at the very least, a native language-target language comparison, which often leads to insightful hypotheses concerning language transfer phenomena.

In addition to pedagogical influences, linguistically oriented bilingual studies were also influential on the work of early contrastive analysts. Perhaps the most well-known and influential of these works are those by Haugen (1953) and Weinreich (1953). They began a trend which enabled analysts to bring descriptive linguistic techniques to bear on the language contact situation, a situation which went beyond the limiting assumption of traditional linguistics that "each community should be considered linguistically self-contained and homogeneous" (Martinet in Weinreich, 1953:vii). Bilingual speech situations have been analyzed in terms of the linguistic code while at the same time researchers have attempted to account for at least some of the relevant nonlinguistic variables. In fact, Weinreich stressed that not all sources of interference[4] which occur when bilingual speakers switch codes are linguistic. Among other factors listed, Weinreich includes age of learning, motivation, loyalty to a language, language aptitude, and attitude. As descriptive and theoretical tools have improved, researchers have brought them to bear on these problems. DiPietro (1961), for instance, demonstrated that contrastive analysis techniques could be used as tools of analysis in language contact studies.

Major interest in linguistically oriented bilingual studies has traditionally been twofold: (1)

> (1) those instances of deviation from the norms of either language, which occur in the speech of bilinguals...as a result of language contact. (Weinreich 1953:1)

and

> (2) the impact of these deviations upon "the norms of either language exposed to contact." (Weinreich 1953:1)

It is clear to us that there are difficulties with this type of approach. First and most important, a reconstructed form of the source language has to be inferred. For example, Haugen (1953), DiPietro (1961), and Diebold (1963) attempted to discover deviations that occurred in Norwegian, Sicilian, and Greek respectively upon contact with American English in a second language environment. Although research methodology was not stated in every case, it was generally as follows: a comparison of the source language (Norwegian, Sicilian, or Greek of, say, 1900) with the recipient language (American Norwegian, American Sicilian, or American Demotic). This comparison gave the analyst a "residue" of the recipient language which was then compared with the target language (in this case American English). What was then isolated in the Norwegian, Sicilian, or Greek was said to be the result of the languages in contact. This procedure could not be fully carried out, however, since no speaker of the historically earlier source language existed for the

analyst. That is, one linguistic system being compared does not at present exist and, as reconstructed, may not have existed.

A second difficulty concerning the interpretation of bilingual studies centers upon the concept of norm of a language from which deviations are to be measured. The question is: how were these norms obtained? The answer in every case we know of was: they were assumed. For instance, Weinreich (1953:30, 37) gives the sentence:

(1) He comes tomorrow home

as "an example of the application of a grammatical relation of word order from one language (German) to morphemes of another (English)." However, he presents no evidence to show that this sentence is indeed deviant from American English, and that the norm, presumably, is

(2) He comes home tomorrow

Nor was evidence presented to show that speakers of other languages whose word order was like English do not also produce utterances of the sort in 1.

Nonetheless, bilingual studies, especially those achieved through the use of the tools of contrastive analysis, do provide us with an excellent source of hypotheses concerning specific instances of language transfer which can then be tested empirically.

Selinker (1969-based on Selinker 1966) was one of the first experimental studies designed specifically to deal with language transfer in terms of the problem referred to above, namely, that statistical predictions were made within the CA tradition but without statistical controls (cf. also Nemser 1961 and Brière 1966). In his study, Selinker asked questions which are still being asked in much current research in language transfer. One question still being asked is: what can be or actually is transferred? or to put it in Kellerman's framework (1979, 1983), what is transferrable? Yet another central question to the study of transfer discussed in this volume is how does language transfer occur? A third question: what types of language transfer occur? is also a central one. This final question figures prominently in Selinker (1969) in which he takes Lado's *tend to* remarks seriously and investigates in a controlled way linguistic and psychological factors involved in language transfer.

Selinker takes as his object of inquiry the English interlanguage (IL) speech of 13- and 15-year-old Israeli children, native speakers of Hebrew, compared with the speech of the native Hebrew of the same children, as well as with the speech of native speakers of English. He found definite transfer effects of the native Hebrew on Hebrew-English IL word order. In fact, this study is one of the first studies we know of to demonstrate semantic effects on surface syntax. A comparison of the IL with the target language base led the author to a taxonomy of language transfer types. However, as is now recognized, this type of taxonomy confuses the issues of process and product. In the learning situation, learners use previous linguistic knowledge in interacting

with the target language. Based on present information, we feel there is only one process of transfer (but cf. Schachter, Chapter 3, for a nonprocess conceptualization of transfer). Hence, we now believe that there is no need to attribute separate processes (for example, positive, negative, or neutral) to the learner. Our view is that the learner is transferring prior linguistic knowledge resulting in IL forms which, when compared by the researcher to the target language norms, can be termed *positive*, *negative*, or *neutral*.

Historically, the questions about language transfer raised by Selinker (1966) were obscured for a decade by the important research trend linking first and second language acquisition. This trend is best exemplified by the work of Dulay and Burt (1974). Despite the attacks (e.g., Tarone 1974, Rosansky 1976) on the methodology and theory represented in this work and others by these same authors, Dulay and Burt's papers have been influential in the field of second language acquisition, especially concerning language transfer. They set up an alternative approach to contrastive analysis known as the L2=L1 hypothesis, devoting a considerable amount of discussion to contrasting the two, including both CA traditions mentioned above: Fries-Lado and Weinreich-Haugen. They next propose an alternative explanation to account for what within a contrastive analysis framework would be native language effects and then show that there are other factors involved in second language learning which cannot be attributed to native language influence. This result is widely accepted. In so doing, they propose a cognitively based theory of second language acquisition, developmental in nature.

Dulay and Burt were greatly influenced by first language studies, and attempted to make an analogy between the processes of first language acquisition and those of second language acquisition. To show that the L2=L1 hypothesis was in fact accurate, it was necessary, so one thought, to first show that language transfer (because of its past association with a behaviorist school of thought as opposed to a cognitively oriented view) was not and could not be a significant factor in second language learning, for contrastive analysis tradition had been associated with a behaviorist view of language and language learning. This association was unfortunately, we believe, related to loss of prestige for the concept of language transfer from the late sixties until recent years, for clearly, language use and language knowledge cannot be adequately described within a behaviorist framework (cf. Kellerman 1977 for a fuller discussion).

What is clear in retrospect, we feel, is that it is indeed possible and not incompatible to view second language acquisition as both (1) a process of hypothesis testing in which learners create bodies of knowledge from the second language data they have available to them, while at the same time viewing it as (2) a process of utilizing first language knowledge as well as knowledge of other languages known to learners in the creation of a learner language. Thus,

it is clearly possible to accept some version of assumptions underlying the CA hypothesis, expressed at the outset of this chapter (cf. also Wardhaugh 1974), while at the same time accepting cognitive principles underlying Dulay and Burt's work. In recent years, many researchers have come to realize that these two perspectives are not mutually exclusive. In fact, one focus of much current work has been to reconcile a language transfer perspective and a cognitive perspective, in general (cf. Kellerman 1977, 1979; Sharwood Smith 1979; Gass 1979) and a language transfer perspective and a developmental perspective, in particular (cf. Zobl 1980a, 1980b, 1980c, 1982; Andersen 1983).

There is now overwhelming evidence that language transfer is indeed a real and central phenomenon that must be considered in any full account of the second language acquisition process. In fact, this volume brings to the reader some of the recent evidence available, which bears on this controversy. In the face of increasing quantities of L2 data, researchers have begun to once again focus their attention on language transfer, realizing that the baby had been mercilessly thrown out with the bathwater. The pendulum in recent years has begun to settle, with language transfer being investigated as a phenomenon of importance in and of itself. In fact, a quick look at the table of contents of this volume should suffice to acquaint the reader with the breadth and pervasiveness of studies included in recent investigations into language transfer.

Gass (1979) asks some of the same questions that were asked by Selinker (1969), adding two other important ones: what evidence is necessary in order to attribute a form(s) to influence of the native language? and what is the relationship of transfer to language universals? Her work shows that language transfer does indeed take place (an extensive discussion of this point appears in her paper) but, importantly, that some aspects of language are more likely to be transferred than others (e.g., elements that are perceptually salient or semantically transparent). She furthermore shows that language transfer must be put into a broader perspective than what had been previously recognized by relating it to the issue of language universals. Her conclusions point the way to recent developments in the field which deal with constraints on this important phenomenon.

Work by Kellerman (1979, 1983) has figured prominently in the development of this subarea of second language acquisition studies. Kellerman's focus has to do with the principles involved in what he calls the transferability of linguistic elements. He argues that there are definite constraints on transfer which go well beyond mere similarity and dissimilarity of the languages in question. These constraints ultimately involve the learner as an active participant in the learning process, one who makes decisions about what can and cannot be transferred.

Kellerman suggests two interacting factors which are involved in language transfer. One is the learners' perception of the nature of the L2 and the other is the degree of markedness of an L1 structure. The perception of the L2 and the distance from the L1 Kellerman refers to as psychotypology. Transferability in Kellerman's framework is a relative notion depending on the perceived distance between the L1 and the L2 and the structural organization of the learner's L1. The notion of perceived distance constantly changes for learners as they acquire more of the target language. This relates to Schachter's (cf., Chapter 2) notion of previous knowledge, which includes developing knowledge of the L2.

Kellerman's work is rich in terms of the issues discussed and the data brought to bear on these issues. We will here make mention of one additional constraint on transfer suggested by Kellerman: *the reasonable entity principle*, which is based on an analogy to Slobin's (1973) operating principles used in the analysis of first language acquisition data. He claims that language transfer is promoted in cases where the product results in a more systematic, explicit, and logical interlanguage (cf. Gass, 1979, for a discussion of promotion of transfer under conditions of semantic transparency and Broselow, Chapter 5, for additional evidence pertaining to this point).

One final background work to mention is that of Andersen (1983). Andersen explores an original concept of transfer: in this case, a *filter* that controls exactly what of the L2 input is retained by the learner. He also claims the reasonableness of accepting the notion of natural acquisitional processes working together with language transfer processes.

By means of a wealth of data from different language and language learning situations (including the reinterpretation of earlier studies on language transfer), Andersen develops and tests his *transfer to somewhere* principle, attempting to unify processes often considered disparate. Significantly, Andersen attempts to constrain the phenomenon of language transfer by returning to Weinreich's (1953) classic work and integrates principles presented there (congruence, boundness, invariance, and complexity) with those of Naro (1978), Slobin (1973), and Traugott (1977a, 1977b) and adding others such as frequency (cf. Selinker 1969) to the list of factors involved in constraints on language transfer.

This book takes as its assumption that language transfer is an important aspect of the second language acquisition process and investigates what the constraints are on its occurrence. Predictability and selectivity of linguistic elements in terms of constraints on the phenomenon is a major focus of many papers included in this volume.

Professor Corder begins by reinvestigating the phenomenon, appropriately calling into question the term *transfer*. He points out its past association with a behaviorist view of language and the difficulty in viewing the term with-

out all the baggage that goes along with it from the particular psychological framework in which it developed. He suggests *mother tongue influence* as a neutral and broader term to refer to what has most commonly been called transfer.

A number of important issues are raised in Corder's chapter. First, he differentiates between phonology and syntax, in that he sees a difference between phonological and syntactic transfer, i.e., that for the acquisition of phonology there is successive restructuring of the native language, whereas for syntax there appears not to be. For syntax, he suggests that the starting point of L2 acquisition is not the native language, rather that there is a universal starting point which is something like a universal core. He further claims that language learning does not proceed in a linear fashion and makes the analogy with a flower in which many aspects develop simultaneously. A final important point in this chapter is the distinction between borrowing and structural transfer. The former, for Corder, is a performance strategy whereas the latter relates directly to learning.

In her contribution to this volume, Schachter (Chapter 3) provides us with a new conceptualization of the phenomenon of language transfer. Unlike most work in language transfer studies, she views it not as a process, but as a constraint on the types of hypotheses that a learner can formulate about the target language. Moreover, it is not only the native language which constrains the hypotheses; rather, Schachter claims it is previous knowledge (cf. also Keller-Cohen 1979) which includes information about the native language, other languages known, and whatever has been acquired of the target language. In addition to the knowledge of the L2 already obtained (be it complete, incomplete, accurate, or inaccurate), learners' expectations about the target language are also included in this category of prior knowledge.

Through her comparison of L2 acquisition with a hypothesis-testing model, Schachter accounts for previous disparate data. Central to her model is the notion of linguistic domains and the hypotheses based on native language experience which learners make over these domains.

Ard and Homburg's study (Chapter 4) on lexical acquisition is the only study in this volume on this topic. They introduce a different conception of language transfer, one they consider to be closer to the original sense of transfer, involving not just native language look-alikes in interlanguage production but also different learning patterns among learners of different native languages. Their data, based on responses to the vocabulary section of the Michigan Test of English Language Proficiency, suggest that differences in response patterns between Arabic and Spanish L2 learners of English occur in places where the Spanish lexical item is orthographically similar to the English item in question and where the native language Arabic lexical item is not similar to the given English one, as would be predicted. More importantly, there

were significant differences in the results between these two groups of learners, even in cases where there was no overt similarity between either any Spanish or Arabic lexical item and the English item in question. In both instances mentioned, Spanish learners' responses were more accurate than Arabic responses.

These results broaden the view of transfer, reverting perhaps to earlier usage of the term, in that the native language background plays a more subtle and pervasive role than is generally recognized. In this framework, knowing a language which is closely related to the target language can help in many ways in learning that language, only some of which can be accounted for by the mechanical carry-over of native language items and structures. This view of language distance, while similar to Kellerman's view discussed above, is based on formal similarities of differences between languages rather than perceived ones on the part of the learner. Presumably, however, perceived similarities/differences are not totally distinct from formal ones. That is, we feel that the learner is at least able to see some of the most obvious resemblances to the native language, among which are orthographically similar shapes, as Ard and Homburg have shown.

Broselow (Chapter 5) uses the contrastive analysis hypothesis as a basis for investigations of language transfer, showing that a more sophisticated analysis involving underlying forms can lead one to correct predictions about L2 speech behavior. Broselow's contribution is the only one in this volume involving the transfer of phonological features. As with other chapters in this volume (cf., Gundel and Tarone), her L2 data not only show specific transfer effects but are also used as an argument for the correctness of a specific theory of grammar. As in the chapters by Gass and Gundel and Tarone, she relates her findings to principles of language universals, arguing that transfer does not occur when the target language violates universal principles.

Broselow's data, based on native Arabic (Iraqi and Egyptian) speakers' phonological forms in English, suggests a differential treatment of phonological rules based on constraints on those rules, namely, syllable-conditioned versus morphologically-conditioned. This is still another example in this volume of constraining a theory of transfer in that the former promote transfer while the latter do not. The differentiation she proposes between morphologically-conditioned rules and syllable-conditioned rules (in her data, epenthesis-see also the discussion above concerning DiPietro's epenthesis data) is accounted for on the basis of the function of the rule. That is, epenthesis in her data serves to bring the learner's output into conformity with independently established restrictions on possible syllable structure. This relates to Kellerman's reasonable entity principle, since the rule of epenthesis results in a more systematic interlanguage.

Gundel and Tarone (Chapter 6), like Broselow, take linguistic theory as their point of departure. They set up a transfer model, or in their terms, a facilitation hypothesis. This hypothesis takes into account not only the relationship between the native language and the target language but also the way in which a particular form/rule relates to the broader issue of language universals.

Their data base comes from a variety of tasks eliciting information about pronominal anaphora from L2 (English) learners whose native-language background is Spanish, Chinese, and French. Not only do they show that their hypothesis is upheld (that is, no counterexamples were found), but they also propose a developmental sequence for the acquisition of pronominal anaphora. They claim that their results are not consistent with a view of transfer which demands as its evidence L1 linguistic patterns but that they are consistent with a broader model of hypothesis testing based on features of both native and target languages.

The issue of bidirectionality is raised in relation to their chapter (cf. their footnote 1). They claim that the effects of their facilitation hypothesis apply equally from language A to language B as from language B to language A. The issue of bidirectionality, sometimes referred to as reversibility (Selinker 1972) is an interesting one, and evidence pertaining directly to it should be gathered. If their claim about bidirectionality proves not to be correct and if there exist elements which are in fact transferred in one direction and not in another (cf. Zobl 1980a, Gass and Selinker 1983a and b), we feel that this result would be clear evidence that language transfer is not purely a matter of linguistic reflexes. Studies in bidirectionality of language transfer would be particularly illuminating, since we are presumably dealing with the same linguistic structure in both languages and should therefore be able to gain greater insight into what factors, other than purely structural ones, must be taken into account in an understanding of the phenomenon of language transfer.

Bartelt's contribution (Chapter 7) is unique in that it investigates a relatively understudied area in language transfer studies, namely, the transfer of rhetorical strategies. In this chapter, Bartelt reexamines his earlier study (1983) in the light of subsequent research in the areas of processing and nativization. In the study, the data, based on written compositions in English of native Apachean speakers, showed that redundancy (in the form of lexemes, phrases, and sentences), inappropriately used by these students in the English compositions, has the same function in their English interlanguage as in their native language: that of emphasis. Analyzing this phenomenon from a procedural/declarative knowledge phenomenon, Bartelt comes to the conclusion that this transfer "could be regarded as the need for L1 proceduralized knowledge to fill gaps in L2 declarative knowledge." Bartelt raises the possibility

that this rhetorical transfer may fossilize, become part of an ethnically marked norm, and thus "nativization may then be assumed." Finally, Bartelt suggests that "linguistic nativization may be part of the general process of cultural syncretism in which generic schemata act as constraints in selecting compatible features to fill gaps in new knowledge structures."

In Chapter 8 Scarcella discusses "discourse accent" in multiethnic communication, i.e., in conversations between native and nonnative speakers of English; the nonnative speakers are Spanish speakers who are highly proficient in English. She finds evidence of the transfer of some conversational features (topic sequence, back-channel cues, and pause fillers), but not all. Also, through a playback interview technique, she attempts to ascertain whether the Spanish speakers consciously perceive differences in those conversational features which they use in English and Spanish. This is similar to what has been discussed by Olshtain in that features which learners consider to be similar in the L1 and the L2 are transferred, those which seem to be language-particular are not.

Scarcella provides a useful discussion of problems one encounters when seeking to identify objects of fossilization. She raises the issue of fossilization (Selinker 1972, Selinker and Lamendella 1978) as it relates to transfer. Her data are from proficient English speakers who have been in the United States either all their lives or at least the major part of it, while still having English as a second language. If at this stage of their development, their learning has ceased, then as Scarcella points out there may be reason to assume that fossilization has occurred. That is, the highly proficient nonnative speakers in her study, despite many years in the United States, have not overcome their discourse accent. Scarcella, however, proposes an alternative explanation, suggesting that rather than fossilization, the learners' development may have evolved into a fully developed dialect learned from childhood . Fossilization (cf. Chapter 11 by Selinker and Lakshmanan) as it relates to transfer has also been discussed in Zobl (1980a, 1980b), who suggests retardation of development in areas where there is congruence between a developmental feature and a feature of the native language. This congruence may prolong the restructuring of the rule and eventually lead to a fossilized form. What Scarcella has shown is that some conversational features persist in the interlanguage, diverging from native speaker norms, and thus are potential objects of fossilization.

Jordens in Chapter 9 is concerned with interlanguage case marking systems. In his investigation, he considers both occurring and nonoccurring errors of American and Dutch speakers acquiring German as an L2. He takes into account the typological organization of the L1s and the L2, relating transfer effects to the discourse and cognitive function of case marking systems. Jordens shows that the interlanguage systems of the learners in his study are a

result of the L1 relationship between role and referential prominence (a discourse-based function) and between subject and object (a grammatically-based function). Jordens relates differential transfer effects to the concept of markedness, suggesting that marked items are less transferable than unmarked ones.

The role of prior linguistic knowledge is further developed in Chapter 10 by Zobl. Working within a Universal Grammar framework, Zobl focuses on the learning mechanism which incorporates a theory of markedness and sets out to determine the relationship between prior linguistic knowledge and the learner's task of grammar formation, taking into account the need for a grammar which is sufficiently powerful to generate data consistent with L2 input without overgenerating. The evidence to date suggests that adult learners formulate wider grammars due to L1 transfer. If indeed prior linguistic knowledge is responsible for this overgeneration, then the Il grammar of Multilinguals (ML) should differ from that of Unilinguals (UL). More specifically, it should be more difficult for the former to formulate a conservative grammar. In order to isolate the effects of transfer from possible effects of maturational changes, Zobl's study consisted of solely adult-aged learners, 18 ULs and 15 MLs. The subjects were administered a grammaticality judgment task (intuitional responses followed by correction) containing 30 sentences, representing 12 grammatical domains. The base-line data were obtained from eight native speakers. If transfer of prior linguistic knowledge is responsible for the formulation of less conservative grammars, then those sentences which presuppose a more marked grammar should be accepted more often by MLs than by ULs. While analysis showed no statistical significance, MLs did express a less conservative judgments in the majority of grammatical domains, lending support to the Zobl's hypothesis. Additionally, certain patterns in the judgments of the MLs were noticed, which may provide insight into an understanding of how the learning procedure may be affected.

Selinker and Lakshmanan (Chapter 11) attempt to unify two important concepts in SLA research--fossilization and transfer. In so doing, they propose the Multiple Effects Principle as a tool for predicting when fossilization will occur. In their chapter they examine a wide range of contextually based as well as Universal Grammar based data. They claim that fossilization is most likely to occur in those instances in which two or more SLA factors work in tandem. With specific regard to transfer, they find that when fossilization does occur, transfer is nearly always one of those factors. This leads them to hypothesize that transfer is a necessary, or at least, a privileged co-factor in fossilization. This chapter, then, furthers the research tradition which considers the when of transfer. It also breaks new ground in that it goes beyond the when and considers the effects of learners' use of transferred forms.

The view that research conducted within a Universal Grammar framework can offer insights into an understanding of both L1 linguistic competence, L2 acquisition, and a possible relationship between the two, is continued in Chapter 11 with White's contribution. In this chapter, White concisely summarizes the two current trends among researchers who are investigating the implications of parameter theory for SLA. One area of recent research is based on the assumption that UG is still available to L2 learners, that L1 parameter settings are either applied to the L2 or affect the L2 in some way, and therefore, cases of language transfer can be explained. Other researchers, however, question the premise that UG is completely accessible to L2 learners and approach the issue from the opposite direction. Namely, that language transfer can be used to question the full operation of UG in SLA. "If L2 learners can only adopt principles or parameter values found in the L1, this indicates that access to UG is essentially 'incomplete', and helps to account for differences between L1 and L2 acquisition." Additionally, White outlines the differences between UG-based theories' and previous theories' (specifically, the CAH) approaches to transfer, providing support for the view that UG-based research can offer new insights into the phenomena of language transfer.

In concluding this introductory section, we hope that the chapters in this volume provide a deeper understanding of the phenomenon of language transfer and a recognition of its importance as part of the overall picture of second language acquisition. It should be clear that given the vast literature on language transfer, the history presented here has been selective. Moreover, the division of sections in this volume is by necessity somewhat arbitrary, since in some sense all contributions rethink the phenomenon, test the phenomenon, and relate to the construction of theories of language transfer. The division is intended to reflect the major focus of the individual chapters rather than the limits of them.[5] Each chapter in this volume probes a different dimension of the concept of language transfer, although we feel that there are many common elements which we have attempted to bring together in this brief and cursory introduction.

NOTES

1. The reader is referred to the Afterword for a listing of important issues discussed in this volume. Much of the historical discussion in the first part of the chapter was originally worked out in Selinker (1966) with the help of Professor Robert J. DiPietro, to whom many belated thanks are due. I (L.S.) was fortunate enough to have been taught the tools of contrastive and bilingual analyses by Professor DiPietro.

The intent of Chapter 1 is not to be all-inclusive (an impossible task in any case) but to acquaint the reader with background information which should facilitate the interpretation of the chapters in the remainder of this volume.

2. Sweet (1889), while not widely influential in this regard, discussed the influence of the native language on the second language being learned. In his work, Sweet discussed differential effects of native language influence depending on whether the native language and target language were similar or dissimilar. He further distinguished between various language-related activities, such as comprehension and general knowledge of a language, and the effects on them of language transfer. Sweet's views are clearly a precursor to more recent views which do not consider transfer as a monolithic phenomenon. We thank Professor J.C. Catford for pointing out the relevance of Sweet's work to current research.

3. Although the word *tend* may not have appeared in every case, the concept of probabilistic prediction is quite widespread, expressed within the CA tradition through synonyms such as *may* (Moulton 1962, p. 26) or *is likely to* (Kufner 1962, p. 5).

4. The word *interference* has been avoided in this discussion. The primary reason for this is that the word has negative connotations, implying that transfer from the L1 is an evil effect which must be eradicated. First, as many papers in this volume show, transfer can have a beneficial effect in that the L1 can provide a ground upon which further language development can take place. Second, even when the results of language transfer appear erroneous from the perspective of the standard version of the L2, there is little reason to believe that that error necessarily inhibits either the learning or the communicative process. By not using the word *interference*, we hope to avoid an automatic synonymy between the following terms: *error*, *difficulty*, *learning problem*, *interference*, and *transfer*.

5. It is important to note that individual authors are not responsible for the conclusions and implications we have drawn in this introductory chapter.

REFERENCES

Andersen, R. 1983. Transfer to somewhere. *Language Transfer in Language Learning* ed. by S. Gass and L. Selinker. Rowley, Mass.: Newbury House.

Brière, E. 1966. An investigation of phonological interference. *Language* 44. 768-796.

Burt, M., and H. Dulay. 1980. On acquisition orders. *Second Language Development: Trends and Issues* ed. by S. Felix. Tübingen: Gunter Narr Verlag.

Diebold, A.R. 1963. *Code-switching in Greek-English bilingual speech.* Monograph Series on Languages and Linguistics. No. 15. ed. by E.D. Woodworth and R.J. DiPietro. Washington, D.C. Georgetown University Press.

Diebold, A.R. 1965. A survey of psycholinguistic research, 1954-1964. *Psycholinguistics*. Bloomington, Indiana. Indiana University Press.

Dingwall, W. 1964. Diaglossic grammar. Unpublished Ph.D. dissertation, Georgetown University.

DiPietro, R. 1961. Borrowing: its effect as a mechanism of linguistic change in American Sicilian. *General Linguistics* 5.30-36.

DiPietro, R. 1964. Learning problems involving Italian [s], [z] and English /s/, /z/. Proceedings of the Ninth International Congress of Linguistics. The Hague. Mouton and Co.

Dulay, H. and M. Burt. 1974. Natural sequences in child second language learning. *Language Learning* 24.37-55.

Felix, S. 1980. Interference, interlanguage, and related issues. *Second Language Development: Trends and Issues* ed. by J. Fisiak. Tübingen: Gunter Narr Verlag.

Fisiak, J. 1980. Introduction. *Theoretical Issues in Contrastive Linguistics* ed by J. Fisiak. Amsterdam: John Benjamins.

Fries, C. 1945. *Teaching and Learning English as a Foreign Language*. Ann Arbor: The University of Michigan Press.

Gass, S. 1979. Language transfer and universal grammatical relations. *Language Learning*. 29. 327-344.

Gass, S. and L. Selinker. 1983. Language Transfer: A Conference Report. *Transfer and Translation in Language Learning and Teaching* ed. by F. Eppert. RELC, Singapore: Singapore University Press.

Harris, Z. 1954. Transfer grammar. *International Journal of American Linguistics* 20.259-270.

Haugen, E. 1953. *The Norwegian Language in America*. Philadelphia: University of Pennsylvania Press.

Keller-Cohen, D. 1979. Systematicity and variation in the non-native child's acquisition of conversational skills. *Language Learning* 29.27-44.

Kellerman, E. 1977. Towards a characterization of the strategy of transfer in second language learning. *Interlanguage Studies Bulletin* 2.58-145.

Kellerman, E. 1978. Giving learners a break: native language intuitions as a source of prediction about transferability. *Working Papers in Bilingualism* 15.59-92.

Kellerman, E. 1979. Transfer and non-transfer: where we are now. *Studies in Second Language Acquisition*. 2.37-57.

Kellerman, E. 1983. Now you see it, now you don't. *Language Transfer in Language Learning* ed. by S. Gass and L. Selinker. Rowley, Mass.: Newbury House.

Kleinjans, E. 1959. *A Descriptive-Comparative Study Predicting Interference for Japanese in Learning English Noun-Head Modification Patterns*. Tokyo: Taishukan Publishing Co.

Kufner, H. 1962. *The Grammatical Structures of English and German.* Chicago: University of Chicago Press.

Lado, R. 1957. *Linguistics across Cultures*. Ann Arbor: University of Michigan Press.

Moulton, W. 1962. Towards a classification of pronunciation errors. *Modern Language Journal* 46.101-109.

Naro, A. 1978. A study on the origins of pidginization. *Language* 54.314-347.

Nemser, W. 1961. Hungarian phonetic experiments. American Council of Learned Societies. Research and Studies in Uralic and Altaic Languages. Project 32.

Osgood, C. 1953. *Method and Theory in Experimental Psychology*. New York: Oxford University Press.

Rosansky, E. 1976. Methods and morphemes in second language acquisition research. *Language Learning* 26.409-427.

Selinker, L. 1966. A psycholinguistic study of language transfer. Unpublished Ph.D. dissertation, Georgetown University.

Selinker, L. 1972. Interlanguage. *IRAL* 10.209-231.

Selinker, L., and J. Lamendella. 1978. Two perspectives on fossilization in interlanguage learning. *Interlanguage Studies Bulletin* 3.2: 143-191.

Sharwood Smith, M. 1979. Strategies, language transfer and the simulation of the second language learner's mental operations. *Language Learning* 29.345-361.

Slobin, D. 1973. Cognitive prerequisites for the development of grammar. *Studies of Child Language Development* ed. by C. Ferguson and D. Slobin. New York. Holt, Rinehart and Winston.

Sweet, H. 1889. *The Practical Study of Languages*. London. Oxford University Press.

Tarone, E. 1974. A discussion of the Dulay and Burt studies. *Working Papers on Bilingualism* 4.54-70.

Traugott, E. 1977a. Pidginization, creolization and language change. *Pidgin and Creole Linguistics* ed. by A. Valdman. Bloomington, Indiana. Indiana University Press.

Traugott, E. 1977b. Natural semantax: its role in the study of second language acquisition. *The Notions Simplification, Interlanguage and Pidgins and Their Relation to Second Language Pedagogy* ed. by S.P.Corder and Roulet. Geneva: Droz.

Wardhaugh, R. 1974. The contrastive analysis hypothesis. *New Frontiers in Second Language Learning* ed. by J. Schumann and N. Stenson. Rowley, Mass: Newbury House.

Weinreich, U. 1953. *Languages in Contact*. New York: Linguistic Circle of New York.
Zobl, H. 1980a. The formal and developmental selectivity of L1 influence on L2 acquisition. *Language Learning* 30.43-57.
Zobl, H. 1980b. Contact-induced language change, learner-language, and the potentials of a modified CA. Paper presented at the Third Los Angeles Second Language Research Forum, UCLA.
Zobl, H. 1980c. Developmental and transfer errors: their common bases and (possibly) differential effects on subsequent learning. *TESOL Quarterly* 14.469-479.
Zobl, H. 1982. A direction for contrastive analysis: the comparative study of developmental sequences. *TESOL Quarterly* 16.169-184.

A Role For The Mother Tongue

S. Pit Corder

Ever since the first results from the empirical investigations into second language acquisition started coming in some 10 years ago, it has been becoming more and more evident that the generally accepted beliefs about the role of the mother tongue (and other known languages) in second or foreign language acquisition were ripe for reconsideration. Studies of child second language acquisition and the research into immigrant workers' pidgin development have cast considerable doubt upon the generally received view of the process of transfer (Clyne 1968). But although the phenomenon is regularly referred to in the literature, it is rare for it to be discussed as a problem. It is for this reason that I particularly welcome this volume and the conference it is based on devoted as they are to the intensive study of the subject. The fact is that the change in the psychological orientation toward first and second language acquisition which took place during the sixties and which gave rise to a new way of looking at the language of learners and led to the first ever empirical investigations of second language acquisition have even now had little impact upon the general notions about the role of the mother tongue in the learning process. This lack of urgency in coming to grips with the problem may arise from the shift of emphasis in language teaching which has been going on during the same period. The shift I mean is from a concern with the formal properties in language learning, that is, the acquisition of the language system, toward a functional standpoint, where the emphasis is placed on communicative skills. This shift has been identified as a concern more with fluency than with accuracy in language use. It is becoming increasingly doubtful that formal corrective teaching has any significant effect, and there is an increasing belief (Dulay and Burt 1973) that the knowledge of a language develops largely autonomously and independently of specific teaching.

This change of view, which derives, as I have said, from the general shift in the psychological orientation to language learning and the results of the empirical studies into second language acquisition, has meant that the attitude to learners' errors has changed. So long as the objective of language instruction was the development of a native-like knowledge of the language system, the presence of error was a serious matter and had to be dealt with. Since most studies of error were made upon the performance of learners in formal situations where it appears

that errors related to the mother tongue are more frequent, it was natural that an explanation of the phenomenon was of considerable concern to the applied linguist. It was out of this concern that the whole industry of contrastive studies arose.

The situation now seems to be that an interest in the role of the mother tongue in language learning is, in the first place, an essentially theoretical one and is part of the general interest in the processes of second language acquisition. We cannot expect any important conclusions for language teaching to arise out of a better understanding of the role of the mother tongue in the acquisition process.

I have chosen the title of this chapter deliberately, a role for the mother tongue in language learning, because I do not wish to prejudice the nature of my discussion of that role by using the term "transfer" or even less by using the term "interference." I would like to hope that both these terms should be banned from use in our discussions unless carefully redefined. The fact is that they are both technical terms in a particular theory of learning, and unless one is adopting that particular theory in one's discussions, it is best to find other terms for any alternative theoretical position one may adopt. The danger of using such technical terms closely associated with particular theories is that they may perhaps quite unconsciously constrain one's freedom of thinking about the particular topic. The phenomenon which in our particular case the theory claimed to be accounting for, namely, the occurrence in learners' performance of features of the mother tongue, can be and perhaps is best explained without invoking any process which could appropriately be called one of transfer. Or alternatively it may be that some features of the performance can be explained by reference to a process appropriately called transfer and other features not. We must remember that the behaviors which were explainable within that theory by invoking a process of transfer were exemplified by experiments in the laboratory only, and predominantly in connection with sensorimotor behavior and rote learning. Nothing remotely comparable with the complexity of language behavior was ever empirically demonstrated as obeying the rules of proactive inhibition of facilitation.

There may, of course, be some aspects of language performance which, because of their sensorimotor characteristics, are governed by the process of interference. But if this proves to be so, one is not entitled to extrapolate, as was regularly done, from one sort of relatively simple behavior to another sort of much more complex behavior. I would be prepared to claim, for example, that as far as the acquisition of syntactic knowledge is concerned no process appropriately called interference takes place, if by that we mean that the mother tongue actually inhibits, prevents, or makes more difficult the acquisition of some feature of the target language. What "interference" is now most often used to mean is no more than the presence in the learner's performance in the target language of mother--

tongue-like features which are incorrect according to the rules of the target language. This usage carries no sense of an inhibiting process at work as a proper use of the term should, and I believe it should be abandoned.

But there is an even more compelling reason for adopting the phrase "a role for the mother tongue," and that is that there may be features which were never recognized within the theory of transfer and yet are the result of a particular mother tongue. I refer to such phenomena as the avoidance of the use of certain features of the target language by speakers of certain mother tongues (Schachter 1974). The absence or rarity of something can scarcely be the result of a process of transfer.

From what I have said it can be concluded that the original theory of transfer assigned too limited a role to the mother tongue: that we should be looking for a more complex and richer picture of the influence of the mother tongue in second language learning and that we should be well advised to avoid or use with great care the terminology associated with a theory which has been very largely abandoned as too simplistic to account for the complex process of second language acquisition. What we have found is that people have indeed abandoned the theory but have retained the terminology without careful redefinition. This has often led to a certain confusion and vagueness in the formulation of their theoretical positions.

The current psychological framework for approaching the phenomenon of second language acquisition is firmly cognitive. By this I mean that the process of acquisition is seen as one of creating a body of implicit knowledge upon which the utterances in the language are based. Acquiring a language is a creative process in which learners are interacting with their environment to produce an internalized representation of the regularities they discover in the linguistic data to which they are exposed. This internal representation is their interlanguage competence. So long as learners continue to learn, this internal representation is changing and developing. Much of the effort in second language acquisition research has been devoted to discovering the nature of this development. Is it dependent on input in the form of either teaching programs or the frequency of forms met within normal communicative interaction? The best estimate at the present state of the game is that, at least in the earlier stages, the developmental sequence of acquisition is largely autonomous and independent of outside influences and seems to be essentially the same for both adults and children whether receiving instruction or not. In other words, learners appear to have some sort of internal program which operates in such a way as to create essentially the same sequence of development of the internal representation so long as there is adequate data for the acquisition process to operate on.

This account suggests that the developmental sequence is largely independent of external processes such as teaching or variation in the data. But what of internal processes? By these I mean affective factors, such as attitude or motivation or, more importantly, existing knowledge of languages, notably the mother tongue. Affective factors are inherently unlikely to affect the sequence of development, though clearly they may determine the rate of development. But the situation of the mother tongue is clearly different. A knowledge of the mother tongue is a cognitive element in the process and might reasonably be expected to affect decisively the order of the developmental process. This has of course been the very nub of the "classical" position (Lado 1964), i.e., that the relative ease or difficulty in acquiring some feature of the target language crucially depended upon the similarity or difference it bore to the mother tongue. Similarity implied ease of learning and difference difficulty. Ease of learning implied quicker and earlier acquisition and difficulty slower and later. Thus it was reasonable to suppose that the order of acquisition would be highly sensitive to the nature of the mother tongue and its relation to the target language. However, the evidence from empirical research is largely the other way. The mother tongue does not appear to play a decisive role in the order of development in the target language, at least in the earlier stages. Does it play a role then in the later development? Here we are bound to accept that it does. Some languages are more readily learned than others by speakers of a particular mother tongue. There is a clear relation between speed of acquisition and so-called language distance. The more distant linguistically from the mother tongue the longer a language takes to learn. This can be explained simply by saying that the more similar the mother tongue and the target language the greater help the mother tongue can give in acquiring the second language. The less similar, the less help it can give.

Note that this formulation stresses the heuristic and facilitative role of the mother tongue. But we must also note that failure to facilitate is by no means the same thing as inhibition or interference. Where languages are distantly related there is no inhibition, simply little facilitation, which is not at all the same thing. This phenomenon of relative facilitation is not to be confused with something I shall be dealing with later, namely, the relative "borrowability" between languages of differing linguistic distance.

I think the main trouble with understanding the acquisition process has been that learning a language is still, even now that mechanistic psychological notions have been nominally abandoned, thought of as a process of acquiring a repertoire of behaviors, or structures, as they are usually called. Language learning is still thought of as essentially a cumulative process, one of adding objects to a store. This seems to me a fundamentally mistaken notion. It is, however, unfortunately

reinforced by the nature of the structural syllabuses upon which our teaching programs have been for so long based. These are expressed as an ordered list of structural items to be taught and learned. It is not surprising then that we so readily fall into the error of supposing that a knowledge of a language can also be appropriately described in terms of a list of structures and the process of learning as a linear progression.

Knowledge of a language is much better thought of as an organically structured whole. In the process of acquiring a language it develops from a fairly simple structure to a highly complex structure in an organic way like a bud gradually developing into a flower. There is no way in which the development of a flower can be adequately described in the form of a linear program. All parts of the structure are developing all the time and nothing is complete until the whole is complete. If this is a better analogy for the development of that mental structure which is a knowledge of a language system, then one can more readily understand why it is not easy to imagine in what way the mother tongue can affect the sequential development of such a structure. While it was relatively easy to imagine a process of transfer when what was being learned was a set of structures or patterns of behavior, it is not at all clear in what way transfer could operate between two mental structures of the sort I have suggested. And yet if the term "transfer" is to be appropriately used within this new psychological orientation, it is between the two mental structures of the mother tongue and the developing interlanguage that it must take place. I shall suggest later in this chapter what mechanism may be involved in this structural transfer.

The order of development in the acquisition of a second language has been regarded as a movement along a continuum, the ideal end point of the movement being, of course, the knowledge of the target language. Language continua are familiar phenomena; indeed in one theoretical formulation (Bickerton 1975) all linguistic systems are continua. But the question one has to answer in the case of second language acquisition is what is the nature of the continuum with which we have to deal? Continua are dynamic systems in which change is the norm. Such systems can be characterized linguistically as a process of replacement of rules, addition or loss of rules. Such processes are called restructuring processes, and we meet typical examples of them in the changes found in languages over time as studied in historical linguistics. The salient characteristic of such changes is that the process does not lead to any change in the overall complexity of the language system. No one would suggest that Anglo-Saxon is overall any more or less complex as a system than modern English, though, of course, comparable subparts or subsystems may be more or less complex. As one moves through time, the language, while in a continuous state of restructuring itself, maintains its overall

complexity at the same level. Other similar restructuring continua are the dialectal and sociolectal continua and the postcreole continuum.

Is the second language acquisition continuum a process of this sort? There is no doubt that, implicitly at least, this was the model that workers in interlanguage had in mind in the earlier days. Interlanguage was defined as a system intermediate between the mother tongue and the target language. Hence its name, *inter*language. One might equally well refer to what the creolists call a mesolect as a system intermediate between the basilect and the acrolect. But note the logical consequences of such a point of view: it implies that the mother tongue is the starting point for the acquisition of the second language, which then proceeds by a series of restructurings of the mother tongue or a sequence of approximative systems progressively more similar to the target language. This is an attractive picture and it has as its consequence that the earlier stages of the interlanguage would be more mother-tongue-like than the later stages. And, of course, we do find more incorrect mother-tongue-like features in the learner's performance in the earlier stages than in the later stages, both syntactically and phonologically. I think it is very likely that this model fits the acquisition of the phonological system of a second language fairly well. This means that the acquisition of the pronunciation of a second language is indeed largely a matter of progressively restructuring the mother tongue phonological system in the direction of the target language (Dickerson 1975). This is in contrast, I suggest, to the case of syntax acquisition where the starting point appears not to be the mother tongue system. One has only to examine the utterances of a beginning learner to realize this. The pidgin-like grammar of the learner's earliest utterances is typically uninfluenced by the grammar of the mother tongue or even the target language (cf. Ervin-Tripp 1974). The continuum of development of syntax is apparently then of a different sort; it is a continuum of increasing complexity or, as I have elsewhere called it, a developmental continuum (Corder 1977). One meets such continua elsewhere in language just as one does the restructuring continua. Examples of developmental continua are the post-pidgin continuum, in which a pidgin develops into a creole, or the developmental continuum of first language acquisition. The characteristic of this sort of continuum is that wherever one may sample it, the complexity of the system one encounters is different. The target, or end point, is the same as in the restructuring continuum, a fully complex linguistic system, but the starting point is either zero as in child language acquisition or some minimally complex grammar as in the post-pidgin continuum. In the case of second language acquisition the starting point is certainly nothing as complex as the grammar of the mother tongue. If it were, the earliest stages of the interlanguage would not be pidgin-like.

There have, of course, been suggestions that the acquisition of the second

language follows a similar course to the development of a first language, at least in children (Dulay and Burt 1973); this proposal was based upon the similarity of the errors produced by children in the course of acquiring a second language to those produced by infants acquiring the mother tongue. However, the developmental sequence was eventually shown to be different (Dulay and Burt 1974); furthermore, the whole functional aspect of language was ignored in these proposals. Second language learners not only already possess a language system which is potentially available as a factor in the acquisition of a second language, but equally importantly they already know something of what language is for, what its communicative functions and potentials are. This the infant has to learn. But that is a topic on which I do not propose to embark here. What does concern us, however, in the comparison between the developmental continuua of first and second language acquisition is the question of the starting point. I do not propose to get involved here in a consideration of the relative merits of the interactionist and nativist points of view about the infant's innate linguistic resources upon embarking on the acquisition of language. The fact is that the learner of a second language already possesses a language and the experience of learning one. If one examines the nature of the learner's earliest grammar, one notes its extreme simplicity: for example, the lack of all morphological marking, the absence of a copula and articles and the relative fixity of word order, to mention only a few features. It is, as has now often been pointed out, very similar to a pidgin in its structural properties and indeed to the language of infants in the earlier stages of acquiring their mother tongue. It is as if the second language learner regressed to an earlier stage of his own linguistic development. And it is not, I believe, an accident that the structural characteristics of the learner's language are so pidgin-like in the earlier stages. Not only can learners be said to regress to an earlier stage of their own linguistic development but to some more basic, possibly universal, grammar. This could be expressed as the mother tongue stripped of all its specific features. If this is the case and the study of the earliest stages of interlanguage strongly suggests that it is, then one will want immediately to know where the learners have become acquainted with this basic simple grammar. There are various possible answers to this question. We are exposed in everyday life to samples of performance in simple codes which serve certain restrictive functions in our discourse: foreigner-talk for representing or mocking foreigners' speech; baby-talk for talking to pets or representing the way adults interact with infants; deaf-talk, the language of instructions, and so on. In other words, it is possible that simple codes may be learned. Indeed it has been suggested that it is part of our native competence to know how to simplify the grammar of our mother tongue, that we have what Samarin (1971) called "a universal intuitive notion of simplifica-

tion." An alternative, and to me more convincing, explanation is that we all know a simple basic code because we ourselves have created one in the course of acquiring a first language. It is now fairly well established that all infants in the acquisition of their mother tongue go through the same stages in the earlier part of their acquisition. As Lyons (1973) has pointed out, it is indeed a fairly traditional point of view that the relatively simple rules that are required to analyze infants' utterances are, if not universal, at least more general than many of the rules required to analyze adult speech and that the more complex grammatical characteristics of adult language are developed on the basis of this earlier system.

What I am suggesting, then, is that the starting point of the developmental continuum of second language acquisition is a basic, simple, possibly universal grammar, either learned or more probably created and remembered from the learner's own linguistic development. This can scarcely be called the mother tongue, since it is not a fully complex code; indeed as Ervin-Tripp (1974) has pointed out, it contains rules which are quite definitely not those of the mother tongue. It is a quite common experience that language learners in the early stages will produce linguistic forms which can be related neither to their mother tongue nor to the target language.

It is often suggested that the learner in the earlier stages of learning simplifies the target language. This has even been identified as a learning strategy. However, as has been pointed out by several writers (e.g., Valdman 1977), this is an impossibility psychologically, since obviously you cannot simplify what you do not already possess. Linguistic simplicity may be the result of a learning process, but it cannot be psychologically a learning strategy. If simplification is part of second language acquisition, it must be the mother tongue which is simplified and stripped of its specific properties and features to serve as a basis upon which the learning and elaboration of the second language proceed.

So far my concern with the role of the mother tongue has been in connection with the process of learning, and we may have come to the conclusion that its effect is predominantly heuristic and facilitatory; it helps in the process of discovery and creation. If anything which can be appropriately called transfer occurs, it is from the mental structure which is the implicit knowledge of the mother tongue to the separate and independently developing knowledge of the target language. The evidence for such a process of transfer is presumably the persistent occurrence of incorrect mother-tongue-like features in the learner's performance, what Schachter (1978) has called "resident errors." I do not, however, underestimate the difficulty of differentiating between those mother--tongue-like features which can be accounted for in this way and those which are a product of what we may call "borrowing."

"Borrowing" is a *performance* phenomenon, not a *learning* process, a feature, therefore, of language use and not of language structure. It is a communicative strategy, recognized as such by Tarone (1977) under the name of transfer, and also by Kellerman (1977), who equally refers to transfer as a strategy. The term "borrowing," of course, is a familiar one in historical linguistic studies where it is used to refer to the temporary or permanent use of a linguistic feature from one language in the performance of another. In the case of second language learners, the process refers to the use of items from a second language, typically the mother tongue, particularly syntactic and lexical, to make good the deficiencies of the interlanguage. This is a process which has long been recognized as a source of so-called interference, a totally inappropriate name for the phenomenon, since nothing whatsoever is being interfered with. An explanation of the process has also been called the "ignorance hypothesis" of language transfer. Again the term "transfer" is inappropriate for reference to the phenomenon, since nothing is being transferred from anywhere to anywhere. What is happening is that the speaker is using certain aspects of his mother tongue to express his meaning because his interlanguage lacks the means to do it. We do not say that a person is transferring anything when he speaks his mother tongue in other contexts. Nor should we here.

In its most extreme form "borrowing" is indistinguishable from the process of relexification, as Zobl (1980) has pointed out, that is, the replacement of lexical items in one language by those in another, leaving the syntactic structure unaffected. In the case of "borrowing," this would suggest that what is happening is that the learner is simply retaining his mother tongue syntax and using target language lexicon. A suggestion that this is what happens in the early stages of the development of a pidgin has been made by Bickerton (1977), and since he refers to the situation of a pidgin speaker as one of a "handicapped second language learner," it would seem that Bickerton believes that the starting point of second language learning is relexification. I have already suggested an alternative starting point.

There is no reason why pidgin creators should not also, when starting to produce a pidgin, regress to a basic, possibly universal grammar. Indeed such suggestions have been made (cf. Traugott 1973). What would then be relexified would not be the fully complex grammar of the mother tongue but the simple code to which they regressed. In this respect they do not seem to be in any different situation from other learners. What does differentiate them is their need to communicate with whatever resources they can muster and relatively little access to date in the superstrate language. How otherwise can we explain the notable similarities between pidgins and the early language of second language learners? And yet the evidence from immigrant pidgin studies does not suggest that

communicative pressure necessarily forces borrowing from the mother tongue. Clyne (1968) has noted how little borrowing there is in such situations. It may be that the solution to this problem is that immigrants are not involved in creating pidgins but in learning an already existing and more developed language capable of serving their limited communicative needs. Whatever the truth may be, wherever we find communicative pressure exceeding knowledge we get "borrowing" most strongly.

If it were merely a matter of relations between the mother tongue and target language and the properties of the cognitive apparatus, then for any pair of languages the occurrence of borrowing phenomena in the target language performance would be the same for all learners. It is manifestly not so. On the contrary, borrowing phenomena are highly variable and clearly situation-dependent. This means they cannot be a by-product of learning but must be a performance phenomenon.

But a relation between the two relevant languages does play a part. Language distance is involved not only in learning but also in performance. Borrowability is a feature of the perception of the relationship between first and second languages, as Kellerman (1977) has shown. It follows then that where language distance is great, it is likely that learners will eventually discover the relative unborrowability of much of their mother tongue. Hence the relatively lower incidence of borrowing and hence of borrowing errors (Schachter 1974). Where the languages are closely related, speculative borrowing does not produce much error; it is relatively more successful. Hence, as has often been noted (e.g., Ringbom and Palmberg 1976), it is precisely where the languages are only moderately similar that we get the heaviest incidence of borrowing errors. Learners are prepared to borrow but are less likely to be successful in avoiding error.

The mother tongue is, of course, not the only source of borrowing behavior. Any other languages known to the learner are also a source of forms when he is casting around to supplement his interlanguage. Studies have shown (Khaldi 1981) that where one of these other second languages is formally more closely related to the target language, borrowing is preferred from that language rather than from the mother tongue. It sometimes appears the case that there is a positive preference for borrowing from other second languages, and often the less well known they are to the learner the more they prove a source of borrowing. Needless to say, these processes are by no means always conscious or even accessible to introspection, but it does seem from anecdotal evidence that the mother tongue is perceived to be more different than it often in fact is, and that the other second languages are perceived, perhaps erroneously, to be linguistically more close to the target language. The mother tongue does appear to have some sort of unique status.

Needless to say, as knowledge of the target language increases the need to borrow decreases and the proportion of errors attributable to borrowing behavior decreases as well (Taylor 1975). Meanwhile, as Kellerman (1978) has shown, a more realistic perception of the potential of the mother tongue as a source of borrowing supervenes, at least at a conscious level.

I have used the expressions "successful" and "unsuccessful" borrowing to refer to the results of borrowing which do or do not lead to error, but, of course, from the speaker's point of view success is to be judged by whether communication is successful, not by whether error is or is not present. It seems likely that only the grossest syntactic errors interfere seriously with communication, and that consequently borrowing from the mother tongue, when it is not too distant, is generally a rather successful communicative strategy. This being so, it would account for the persistence of errors derived from mother tongue borrowing. As teachers we know only too well that the formal correction of errors has a minimal effect on the spontaneous communicative use of language. The development of the implicit knowledge on which communicative performance is based is probably little affected by formal instruction (Krashen 1981). As I have already noted, the development of the implicit knowledge is apparently an autonomous process largely uninfluenced by outside factors. There is no reason to suppose that persistent error is uniquely, or even principally, the result of what I have called structural transfer. It is just as likely to be the result of successful borrowing.

The question arises, then, is there any way in which we can distinguish between the results of structural transfer as a learning process and borrowing as a communicative strategy? Both would appear to lead equally to nonce errors and regular errors. Perhaps the answer is quite different. We have here, rather, I suggest, an explanation of the process of structural transfer itself, namely, that persistent communicatively successful borrowing works backwards, as it were, and the successfully borrowed forms are eventually incorporated into the interlanguage grammar, both the correct and the incorrect. Thus, it is proposed that borrowing is the *mechanism* itself whereby structural transfer takes place.

A similar process is involved in the borrowing of items from one language into another. The start of the process is in the speaker of one language using items from another in communication. It is only after regular, repeated, and *communicatively successful* use of the borrowed items that they come to be incorporated into the language system of the borrower's mother tongue.

It is now a commonplace to suggest that the acquisition of a second language, that is, the development of the implicit knowledge, is a product of the attempt to communicate (Hatch 1978). If this point of view is valid, it is not implausible that structural transfer, which is a learning process, results from

borrowing, which is a strategy of communication. This proposal provides both the mechanism and the motivation for structural transfer, two features which have been notably absent from the classical discussion of the subject. This proposal also provides a mechanism for the process of facilitation, that is, the quicker learning of forms which are similar in the mother tongue and the target language. Borrowing does not necessarily lead to incorrect utterances, but both correct and incorrect utterances may be successful in communication. Both similar (i.e., correct) and dissimilar (i.e., incorrect) forms may be incorporated into the interlanguage because they have communicated successfully. Ultimately most, but not all, the incorrect forms are eliminated in the course of further learning while the correct items are incorporated into the permanent structure of the interlanguage. In this way the borrowing of correct forms leads to facilitation, that is, the acquisition of forms similar in the two languages.

The time has now come to summarize my thesis. It is not conceivable that in the acquisition of a second language the existing knowledge of a language or languages and the modes and purposes of their use should not play a part. All that we know about learning insists that previous knowledge and skills are intimately involved in the acquisition of new knowledge and skills. What I have been trying to suggest is that the part played by the mother tongue in the acquisition of a second language is a good deal more pervasive and subtle than has been traditionally believed. It plays a part at the start of learning, in the process of learning, and in the use of the target language in communication. As a starting point it is not the fully developed adult form of the language on which subsequent development is based, but a sort of stripped-down version, a basic simple, possibly universal, grammar. Language acquisition is a process of elaborating this basic grammar in the direction of the target, and here again the mother tongue comes in to act as a heuristic tool in the discovery of the formal properties of the new language, facilitating especially the learning of those features which resemble features of the mother tongue. Where languages are closest structurally, the facilitating effect is maximal. The actual mechanism of facilitation may be by means of borrowing items and features from the mother tongue as a communicative strategy, which if communicatively successful, leads to an incorporation of the item or feature into the interlanguage system. This is structural transfer. Since successful communication does not entirely depend upon the formal correctness of the utterance, items and features which have been borrowed but which are not similar to the target language may get wrongly incorporated into the interlanguage system giving rise to error which may sometimes be fairly persistent. The willingness of learners to borrow may be determined by their perception of the linguistic distance between their mother tongue and the target language. Hence the phenomenon of avoidance

of structures which differ from the mother tongue.

Nowhere in this account is there any process which could appropriately be called "interference," and while I have identified tentatively one process which could be called "transfer," its existence does not seem to me to be easily provable or distinguishable from "borrowing." To close, I strongly recommend the most careful use of terms which have been taken over from a theoretical model which few would now espouse. Unless such care is exercised, the possibility of theoretical progress and understanding of many very complex processes may be jeopardized.

REFERENCES

Bickerton, D. 1975. *Dynamics of a Creole System.* Cambridge: Cambridge University Press.

Bickerton, D. 1977. Pidginisation and creolisation: language acquisition and language universals. *Pidgin and Creole Linguistics* ed. by A. Valdman.

Clyne, M. 1968. Zum Pidgindeutsch der Gastarbeiter. *Leitschrift fur Mudartforschung* 35.2:130--139.

Corder, S. P. 1977. Language continua and the interlanguage hypothesis. Actes du 5eme Colloque de Linguistique Appliquée de Neuchâtel. Neuchâtel. Faculté de Lettres, Geneva. Droz.

Dickerson, L. J. 1975. The learner's interlanguage as a system of variable rules. *TESOL Quarterly* 9.4:401-408.

Dulay, H. C., and M. Burt. 1973. Should we teach children syntax? *Language Learning* 23.3:245-258.

Dulay, H. C., and M. Burt. 1974. Errors and strategies in child second language acquisition. *TESOL Quarterly* 8.2:129-136.

Ervin-Tripp, S. M. 1974. Is second language learning like the first? *TESOL Quarterly* 8.2:111--129.

Fathman, A. 1975. The relationship between age and second language productive ability. *Language Learning* 25.3:243-253.

Hatch, E. 1978. Discourse analysis and second language acquisition. *Second Language Acquisition* ed. by E. Hatch. Rowley, MA: Newbury House.

Kellerman, E. 1977. Towards a characterisation of the strategy of transfer in second language acquisition. *I.S.B.* 2.1:58-146.

Kellerman, E. 1978. Giving learners a break: native language intuitions as a source of predictions about transferability. *Working Papers in Bilingualism* 15.59-93.

Khaldi, K. 1981. The use of the strategy of transfer by learners with a bilingual background. Unpublished M. Litt. thesis, University of Edinburgh.

Krashen, S. D. 1981. *Second Language Acquisition and Second Language Learning.* London: Pergamon Press.

Lado, R. 1964. *Language Teaching.* New York: McGraw-Hill.

Lyons, J. 1973. Deixis as a source of reference. Work in Progress No. 6, Department of Linguistics, University of Edinburgh.

Ringbom, H., and R. Palmberg eds. 1976. *Errors made by Finns and Swedish-speaking Finns in learning English.* Åbo. Åbo Akademi.

Samarin, W. S. 1971. Salient and substantive pidginisation. *Pidginisation and Creolisation of Language* ed. by D. Hymes. Cambridge: Cambridge University Press.

Schachter, J. 1974. An error in error analysis. *Language Learning* 24.2:205-213.

Schachter, J. 1978. Interrelationships between total production and error production in the syntax of adult learners. *Papers in ESL*. NAFSA.

Tarone, E. 1977. Conscious communication strategies in interlanguage. *On TESOL 77*. Washington: TESOL.

Taylor, B. 1975. The use of overgeneralisation and transfer strategies by elementary and intermediate students of ESL. *Language Learning* 25.1:73-107.

Traugott, E. C. 1973. Some thoughts on natural syntactic processes. *New Ways of Analysing Variation in English* ed. by C. J. Bailey and R. W. Shuy. Washington: Georgetown University Press.

Valdman, A. 1977. Creolisation: elaboration in the development of Creole French dialects. *Pidgin and Creole Linguistics* ed. by A. Valdman. Bloomington: Indiana University Press.

Zobl, H. 1980. Developmental and transfer errors: their common bases and (possibly) differential effects on learning. *TESOL Quarterly* 14.4:469-483.

A New Account Of Language Transfer[1]

Jacquelyn Schachter

Many of us have, for some time, thought of transfer as a process. Transfer was something that the learner did. In fact, the very word itself implies some sort of a process. We say "the learner transferred" a structure, phone, lexical item from one language to another, and when we do, we envision some sort of action or movement, even though it may be abstract action or movement.

My current view is that transfer is not a process at all, and is in fact a misnamed phenomenon--an unnecessary carryover from the heyday of behaviorism. What is currently viewed as evidence for the process of transfer is more appropriately viewed as evidence of a constraint on the learner's hypothesis testing process. It is both a facilitating and a limiting condition on the hypothesis testing process, but it is not in and of itself a process.

In order to explicate this new notion of transfer, however, it is first necessary to sketch an account of the framework or perspective from which I view it, that is, to provide a characterization of the hypothesis testing process itself, so that this new explanation of transfer is made clear in terms of its relationship to the hypothesis testing process. Surprisingly, although many researchers in second language acquisition assume such a process (we often adopt the Dulay and Burt 1974 term "creative construction" to refer to it), little attention has been paid to what it might imply. Two questions need to be addressed. What do we mean when we say that adults learn second languages by formulating hypotheses and testing them against the data available to them? What ontological commitments are we making when we do so?

What is needed, in fact, is a model of adult second language acquisition which has at least the following characteristics: it explicates the notion that adults learn second languages by formulating and testing hypotheses; it incorporates an adequate account of transfer; it illuminates a large array of the facts currently available to us.[2]

What I propose to do here is to present a candidate model, one that has the characteristics mentioned and thus deserves further study. It is my adaptation--to adult second language learning--of a model developed originally to account for adult concept learning. The model rests on the work of psychologists such as Bruner, Goodnow, and Austin (1956); Restle (1962); Estes (1960); and others but

was developed explicitly by the cognitive psychologist Marvin Levine (see Levine 1975). He calls it "hypothesis theory" or simply "H theory." The idea of taking a model developed to account for adult human concept learning and adapting it as an account for adult human second language learning rests on the assumption that there are significant similarities between them and that the differences are not as significant as had previously been supposed. It is my claim that this is the case, but to present the arguments in depth would require another chapter. Not having that luxury, what I will do is diverge from the main goal of the chapter long enough to present a few of the similarities and claimed differences between language learning and concept learning, and then return to an account of the model within which this new notion of transfer is to be explicated.

Adult Concept Learning And Language Learning: Similarities And Differences

The most obvious similarities reside in the characteristics of the learners. Both groups are adults and thus do not present the problem of comparing cognitively mature and immature populations. In addition both groups already know one language or more, and thus can take advantage of this knowledge in approaching the new learning task, even though for concept learners the knowledge of a language will be less relevant than for language learners.

The less obvious similarities involve the task and the situations the learners must deal with. With regard to the task itself, the similarity is exhibited by the fact that at the outset, in both concept learning and language learning, the subject does not know, except in a very general way, what it is that must be learned.[3] The task in both cases is to scan the input and identify its dimensions, then to observe the regularities and isolate the relevant dimensions, and finally to generalize from those relevant dimensions.

With regard to the situations in which the task is attempted, it is the case that in both concept learning and language learning two situational variables are crucial: one involves the subject's control over the input and the other the provision of feedback to the subject. In concept learning there exist two basic variations on the subject's control over the input, each of which has situational analogs in language learning. In one variation the subject has no control over the input and must extract information from data the subject may or may not be prepared to deal with (listening to a lecture, for instance). The obvious analogy in language learning is exhibited by the situation in which the learner is faced with a stream of speech from the native speaker which is not regulated in any way to accommodate the learner, such as when a native speaker in one-on-one conversation does not realize the limits to the subject's proficiency or when the native speaker is addressing a primarily native-speaking group (lecture, radio, TV, etc.). In the other variation

(called the Selection Condition experiment in the experimental literature) the subject can choose a certain dimension (or subset of dimensions) and test them out in the manner that seems most productive to the subject, not an outside controller (learning to operate a computer by interacting with it, for instance). In similar fashion the language learner can formulate and produce sentences and then wait and see if native speakers respond in the way the learner predicts they will (i.e., if the learner expected a yes/no response, did she get one?).

There are also, in concept learning, two basic variations on the provision of feedback, each of which has situational analogs in language learning. In one variation, no feedback is provided (these are called Blank Trials in the experimental literature), thus leaving the subjects in the position of having to make their own assumptions about how well they are doing (this might be the case, for example, in trying to learn geometry from a textbook in which exercises are provided, but no answers). Lack of feedback on form, particularly negative feedback, is common in naturalistic language learning situations, as the native speaker will often tolerate grossly deviant sentences from the learner, especially when the learner and the native speaker do not know each other well. In the second variation, the subject receives feedback (right or wrong) after each attempt (a computer, for example, will provide feedback after each attempt at interacting with it). Consistent feedback after each utterance is probably nonexistent in naturalistic language learning, but it may be a typical teacher behavior in the classroom during certain drills. However, recent work on negative feedback (cf. Day, Chenoweth, Chun, and Luppescu 1981) indicates that more feedback occurs than had previously been claimed to occur (cf. Long 1981) in nonclassroom language learning situations.

Miller (1967) presented a summary of the differences between concept learning and language learning as he saw them then, a summary which was no doubt influential in discouraging others from exploring the possibility of similarities between the two. It is certainly cited by others as providing convincing arguments against such an approach (cf. Braine 1971, Wason and Johnson-Laird 1972). But viewed from the perspective of adult second language learning, some of the most crucial differences disappear, since they apply to child first language learning, but not to adult second.[4] Of the differences that are applicable in this case, three deserve discussion.

The first is that in a concept learning experiment the things to be learned are typically presented visually, not verbally, thereby emphasizing different kinds of patterning. This looks to be a possibly serious objection since if it were true the insights derived from concept learning experiments would not be applicable to the language learning case.[5] The only relevant discussion of this matter I know of is by Bever (1970) in which he relates certain visual processing difficulties and

certain language processing difficulties to the same underlying and general cognitive restriction. It would be my expectation that such restrictions would indicate a more basic mechanism underlying and constraining in similar ways the processing of both language and vision.

Another claimed difference is that even in artificial language learning tasks--which on the face of it most closely resemble real language learning--the experiments do not involve meaning. This is true but is simply a failure of the experimenters (and also, possibly, inadequate technology). Miller himself suggests several interesting ways of adding meaning to artificial language learning tasks (see also Moeser 1977 for an interesting approach).

The last difference is that the language learner, according to Miller, is acquiring a sensorimotor skill whereas the concept learner is figuring out an abstract cognitive pattern. This claim is only half true: the language learner must accomplish both, whereas the concept learner deals only with one. To what extent the sensorimotor aspect of language learning affects the abstract cognitive aspect remains to be tested.

On reflection, it appears to me that the similarities between adult concept and adult language learning are sufficient to pique one's interest, and that the differences, although they must be kept in mind, are not sufficient to force one to abandon the inquiry. One further reservation might be that it is inappropriate to claim that experimental learning studies will explicate what goes on in non-experimental settings. Braine's response to just such a criticism is worth quoting here:

> The claim that pattern learning abilities revealed in the laboratory are actually used in natural language acquisition rests at the moment on the inherent plausibility of the notion that language learners will use, in language learning, any abilities which they demonstrably possess and which would obviously be useful in learning languages. (1971:162)

The Outlines Of Hypothesis Theory

The model, in essence, is quite simple. It involves (1) the notion of hypothesis formulating and testing behavior on the part of the learner, (2) the concept of a universe of hypotheses, (3) various domains within the universe, and (4) the notion of inferencing and sampling behavior on the part of the learner.

The idea that learners formulate and test hypotheses against linguistic input has been with us for some time now and is generally, if not universally, accepted (but see Braine 1971 for arguments to the contrary). Hypothesis testing is, as Katz puts it, "similar in character to theory construction in science but without the explicit intellectual operations of the latter" (1966:274-275). A language learning hypothesis is a prediction that language is organized in a certain way, and can be

distinguished from what psychologists call a response set[6] in that the hypothesis is contingent upon feedback whereas a response set is not.

There is strong evidence to show that adults learn concept discrimination and the syntax of artificial languages by formulating and testing hypotheses against the data (cf. Bruner, Goodnow, and Austin 1956; Wason and Johnson-Laird 1972; Levine 1975, Miller 1967, etc.). And it is my claim that there is no strong evidence to show that adults learning a second language do otherwise (but see Reber and Lewis 1977 in which a different interpretation of artificial language learning tasks is presented).

This notion is not a simple one. It involves, minimally, two kinds of inferencing behavior by the learner--inductive inferencing, in which the learner scans the data, observes regularities in it, and generalizes (that is, formulates a hypothesis), and deductive inferencing, in which the learner tries out the newly formed hypothesis to see if the data she observes are consistent with it (that is, tests a hypothesis). Exactly how hypotheses are formed by the learner is not known. What H theory advocates claim is that the evidence is such that hypothesis formation by the learner must be inferred in order to account for the data (Levine 1975). How hypotheses are tested is an area in which considerable research has been carried out, at least in concept learning, and the information gathered so far is rather surprising. As any scientist knows, for example, the most efficient way to test a hypothesis is to look for disconfirmation of it. Confirmation will not prove the hypothesis is correct, but disconfirmation will prove that it is wrong. Apparently, in concept learning tasks, normal adults (that is, nonscientists) do not do so. They tend to look for verification of their hypotheses, not disconfirmation (cf. Bruner, Goodnow, and Austin 1956; Wason and Johnson-Laird 1972). This is not to say they do not take disconfirming evidence into account (as child first language learners occasionally do not) but only that they do not seek it out. Eventually, disconfirming evidence sinks in and the learner is able to take advantage of it in reaching the correct hypothesis. Clearly much work needs to be done here, specifically with language learning, since the whole question of negative data is a crucial one for any hypothesis testing model.[7] This model claims specifically that disconfirming evidence results in the learner's abandoning the current hypothesis and looking for another. It makes no claims about what kinds of evidence learners look for to test their hypotheses, confirming or disconfirming.

The idea behind the concept of a universe of hypotheses is that the learner brings to the task some notion of the hypotheses that might be worth testing. That set of hypotheses is called the *universe*. There are at least two sources for those hypotheses. The first source is the knowledge the learner has gained in previous learning in tasks of this kind. The second source is the new learning situation itself.

And while the second source, the learning situation, probably has more salience, at least at certain times, the first source, previously gained knowledge, is always available to the learner.

The concept of a universe is not that of a static list of hypotheses to be checked out one by one, but rather one which expands as the learner gains experience. That is, as the learner becomes more proficient in the target language, she will develop hypotheses on the basis of experience with the target, and these will be added to the ever-expanding list of hypotheses available so that while some are being tested and dropped, others are being added. These others, which have as their source the language learning situation itself (the input) might at times result in what are called developmental errors. It should be noted, however, that although the learner has, in theory, the whole universe of hypotheses available at all times, because of such things as disconfirming evidence, the salience of certain hypotheses, etc., the learner may at any point ignore some of the available hypotheses and focus on certain others. In that sense one could say that the set of hypotheses available to the learner contracts as well as expands.

The notion of *domains* within the universe involves the idea that hypotheses will fall into natural groupings, that is, that groups of hypotheses will share certain characteristics, which in Hypothesis theory are called *domains*, but which linguists might prefer to label abstract categories. The concept of a domain should be a familiar one to linguists. When we talk of the syntactic knowledge (or intuitions) of a language that speakers have, we are talking about their internal organization of sentences into clause types, phrase types, lexical categories, etc. These categories are what, in this framework, are called domains. The work of such psycholinguists as Miller, Bever, and others has shown us that there is considerable evidence for such internal structuring of speech.[8]

It becomes immediately clear, then, that there must be different shapes and sizes of domains: (1) there are larger and smaller domains (e.g., within the domain of main verbs in English, some take complements and some do not; so "main verbs that take complements" is a smaller domain than "main verbs"); (2) there are cross-cutting domains (e.g., each of the common noun and proper noun domains of English is divided by the concrete noun and abstract noun domains, as are the concrete and abstract noun domains cross-cut by the common and proper noun domains); (3) there are simple domains and complex domains, and there are even different kinds of complex domains (e.g., conjunctive domains (A *and* B *and* C), disjunctive domains (A *or* B), sequence domains (e.g., ABBA, ABAB).

In sum, a simple characterization of the model is as follows: (1) the learner has available a universe of hypotheses; (2) the hypotheses are clustered into domains; (3) the learner chooses a domain and samples hypotheses within it; (4)

the learner tests the hypotheses against the input.

The Transfer Hypothesis

The Levine hypothesis is that: "The S infers from the first *n* solutions the domain within the universe from which the *(n+1)th* solution will be taken. Then S samples hypotheses from that domain" (Levine 1975:271). My adaptation of the transfer hypothesis is: The learner infers from previous knowledge the domain within the universe from which the solution to the current target language problem will be taken. Then, the learner samples hypotheses from that domain.

There are three possible outcomes here. The first is that the learner may choose the wrong domain, either because the input has provided conflicting signs or because the learner has assumed that a preestablished domain of the native language is the relevant domain for the second language. The latter case, but not the former, will be an instance of transfer.[9] The second possible outcome is that the learner may choose both the correct domain and the correct hypothesis, either because the learner has done a good job of analyzing the input or because the native and target language structures are identical and the learner has recognized the fact. The latter, but not the former, will be an instance of positive transfer, of the traditionally identified kind. The last possible outcome is that the learner may choose the correct domain but the wrong hypothesis, either because of a partly mistaken analysis of the input or because of the learner's correctly equating the relevant domains of the native and target languages but incorrectly assuming a hypothesis that would be appropriate for the native language but not for the target language. The latter case is what is generally recognized as transfer error.

This view of transfer carries with it certain consequences that need to be made clear. The first is that the learner's previous knowledge at any point in the learning process will include not only the learner's knowledge of L1 but also any knowledge the learner may have of the target language, including what might be called "imperfect knowledge,"[10] as well as the learner's expectations concerning the target language, conscious or otherwise. What might count as a transfer error in this model is considerably more extensive than what many others have claimed. It will include some of what is now called intralingual error data (although I think there is a distinction to be made between a transfer error and a developmental error) as well as some of the prediction data that Kellerman (1979) and Jordens (1977) have identified (that is, behavior that corresponds to predictions that learners of a target language have prior to and during their experience with it, predictions which are independent of the facts of the target language and which are typically based on knowledge of the native language alone).

Another consequence is that one's L1 knowledge has as much influence on

the learning of an unrelated second language as on the learning of a related one. The evidence may differ, and typically does differ, but the influence is still there. Such phenomena as slower learning (cf. Hakuta 1976 on Uguisu's acquisition of articles), overproduction (cf. Schachter 1974 on avoidance and Schachter and Rutherford 1979 on overproduction), and choice of wrong domain (cf. footnote 9) should be relatively more evident in the data of a learner of an unrelated target, whereas interference (choice of correct domain but wrong hypothesis) and positive transfer (choice of correct domain and correct hypothesis) should be more evident in the data of one who learns a related language.

Furthermore, and most significantly, what is called transfer is, within this model, simply the set of constraints that one's previous knowledge imposes on the domains from which to select hypotheses about the new data one is attending to. As one learns the target language through this process of observation, hypothesis formation and hypothesis testing, the structure of these domains changes and the learner has available at time *i* a partially different set of domains than at time *i-1*. This leads directly to the last consequence, which is that within this model, transfer can be accounted for without positing it as a distinct process. There is simply no need to infer from transfer data an underlying process of transfer. It can be explicated more simply in terms of such basic concepts as inferencing and sampling behavior, domains and hypotheses, concepts which are needed within the model for other reasons anyway.

Transfer Data

Given the model and thus the characterizations of domains, hypotheses, inferencing, and sampling behavior, we have available the paraphernalia to account for a large amount of rather disparate-appearing transfer data.

One can envision comparing two hypothetical learners with regard to the acquisition of a particular structure in the same target language along three dimensions: (1) whether or not they have the same native language (and also the same second language for a third target language); (2) whether in the target language they choose the same domain or different domains; and then (3) given their choice of the same domain, whether the hypotheses they select are the same or different. Table 1 displays the various possibilities.

Table 1 Comparison of Hypothetical Learners along Three Dimensions

Native Language	*Target Language*	
	Domain	Hypothesis
1. Same	Same	Same
2. Same	Same	Different
3. Same	Different	
4. Different	Different	
5. Different	Same	Different
6. Different	Same	Same

Case 1, in which the two learners have the same native language and choose both the same domain and the same hypothesis, is, presumably, a typical situation for speakers of language A learning language B. Their previous knowledge is close to identical (I am excluding the possibility of different dialects here) and their experiences with the target language are similar enough for them to arrive at the same hypothesis. But it is not the only possibility. These two learners may very well choose the same domain but arrive at different hypotheses, as in case 2. That is, they could have somewhat different perceptions of the target language, or somewhat different experiences with it. The most interesting situation would be case 3, in which two learners with the same native language choose hypotheses from totally different domains, even given comparable exposure to the target language. One would expect this case to occur relatively less frequently than other cases. Case 4 reflects a typical cross-language experience in which the two learners have different native languages (and let us assume the simplest case, where the native languages are not related) and choose different domains. Cases 5 and 6, in which the learners have different native languages and choose the same domain, reflect the fact that there are linguistic universals and typological groupings, and thus limits to the ways in which languages can differ. Case 6, furthermore, reflects the reality that any two languages, even if they are totally unrelated, will exhibit certain similarities such that it would be possible, on the basis of native language alone, for two speakers of unrelated languages to arrive at the same wrong (or right) hypothesis in the target language, although again one would expect this to occur less often than other cases.

It is important to note at this point that so far I have been interpreting the chart as if the only relevant learner knowledge were native language knowledge.

If one were to make probability predictions on the basis of this interpretation, one would claim cases 1 and 4 to be most likely, cases 2 and 5 next most likely, and cases 3 and 6 least likely. But if the chart were to be interpreted as if the only relevant knowledge were the target language knowledge, the probability predictions would be quite different. In that case one would expect cases 1 and 6 to be most likely, cases 2 and 5 next most likely, and cases 3 and 4 least likely. Since both native language and target language knowledge are relevant it is advisable to view the chart as quite distinct from probability predictions.

The data that follow are organized so that each numbered set of data is an example of the corresponding numbered case in Table 1. Most of the data appear in Schachter and Hart (1979).

Case 1, involving Farsi speakers learning relative clauses in English, is a case in which speakers of the same language choose the same domain and also the same hypothesis from that domain.[11]

(1a) Today you can find rural people that *they* don't have education.

(1b) There is three roads which people can take *them* to reach Caspian.

The explanation for this is that Farsi is a language in which relative clauses are marked by epenthetic pronouns. There has been some disagreement about the facts of Farsi among several researchers working on relative clause acquisition recently, regarding whether or not the epenthetic pronoun appears when a subject noun is relativized (Gass 1979, 1983; Kellerman 1979). My understanding is that there are certain dialects in which the relativized subject is marked as in (1a) and others in which it is not. In the Tehran dialect, the prestige dialect of the country, it is not so marked. Often, though, when informants are describing the facts to the unsuspecting linguist, they will try to describe what occurs in the prestige dialect rather than the one they actually speak. If my understanding of the facts is correct, Tehran dialect speakers should produce sentences in English like (1b) but not like (1a), and speakers of certain other dialects should produce sentences like both (1b) and (1a).[12] For Farsi learners of English relative clauses the learner domain in this case is: relative clauses; the learner hypothesis is: to mark a relative clause, add a pronominal reflex of the relativized noun.[13]

Case 2, involving Arabic speakers learning English passives, is one in which learners with the same native language choose the same domain, but different hypotheses, to fit the facts. In the acquisition of the passive, what I have found among Arabic speakers are two typical error types. The first involves adding an appropriate (tensed) form of *be* but not adding the past participle form to the main verb.

(2a) Oil *was discover* in the 19th century.

(2b) Their people *is* more *educate* than others part.

The domain for these learners is: the passive construction; the hypothesis is: to mark the passive, add a tensed form of *be*. Examples (2c) and (2d) display the second pattern, in which the past participle form of the main verb is used, but no form of be is added.

(2c) But when oil *discovered* in 1948 and began export it in 1950....

(2d) This theater *built* with different design from the others.

The domain for these learners is the same: the passive construction; but the hypothesis they choose is different: to mark the passive, use the past participle form of the main verb.[14] Because the data from which these sentences were extracted are cross-sectional, no conclusion can be drawn as to whether or not these two sentence types represent stages in the development of the English passive by Arabic learners. What is known is that none of the 75 Arabic speakers in the data base produced both error types in one sample.

Case 3, in which two learners have the same native language and yet choose different domains, may best be exemplified with avoidance phenomena. I have argued elsewhere (Schachter 1974) that Chinese learners of English avoid producing relative clauses because they find them quite difficult. But Chinese learners of English know--at some level--that they are going to have to be able to modify nouns. What can they do? One approach is to continue working on those difficult relative clauses until they are finally mastered, and some learners undoubtedly do this. The other approach would be to find some other way of modifying nouns that wasn't so difficult--noun complements, for example. Schachter and Hart (1979) speculated that Chinese learners do precisely this: develop and use noun complements to modify nouns as an alternate to using relative clauses. Sometimes this is communicatively successful; other times it results in error, as in (3a) and (3b) below.

(3a) There is two kinds of people *to visit the museum.*

(3b) There is a cascade *to drop down a river.*

These are Chinese-produced noun complement errors which appear to English speakers as if they should not be noun complements at all, but rather relative clauses (that is, that (3a), for example, should have been "there is two kinds of people who visit the museum"). My claim is that Chinese learners initially make one of two choices: $domain_1$ (easy), noun complements, $domain_2$ (hard), relative clauses.

Case 4, in which learners of different and unrelated native languages choose different domains, is nicely exemplified by the comparison of Spanish speakers with Arabic speakers on the learning of the modal *can*. The Spanish speakers typically produce sentences like (4a) and (4b):

(4a) The poor people there *can to do* anything.

(4b) He *can't to eat.*

Arabic speakers do not do this. They seem to choose both the correct domain and the correct hypothesis. The reason for this is that all verbs are main verbs in Spanish; there is no modal subclass. *Poder,* the Spanish translation of *can,* is a main verb which, by the way, takes an infinitival complement. So for the Spanish- speaking learners of English the domain is: main verbs; and the hypothesis is: *can* (as main verb) takes a infinitival complement. for Arabic speakers this is not the case since *gadar,* the Arabic equivalent of *can,* does in fact belong to a subclass of modal verbs (along with *baga* "want," *raad* "feel like doing something," *haawal* and *jarrab* "try to do something"). The Arabic case is thus one of positive transfer.

Case 5, in which speakers of different languages choose the same domain but different hypotheses, is exemplified in the comparison of the examples in (4) with the examples in (5). Chinese speakers, as opposed to Spanish speakers, produce forms as in (5a) and (5b).

(5a) I *can working.*

(5b) So I *can't learning* soon.

The Mandarin equivalent of *can,* 'neng,' can also be viewed as a verb that takes a complement. Why they produce the *-ing* form is not at present clear. The domain from which the Chinese speakers choose their hypothesis is the same as that of the Spanish speakers: main verbs; they differ only in the form of the complement they choose (that is, in the specific hypothesis), the Spanish choosing the infinitival, the Chinese choosing the gerundive.

Case 6, in which speakers from unrelated languages arrive at not only the same domain but also the same hypothesis, is exhibited by the nonuse of subject pronouns by both Japanese and Spanish speakers. Compare first (6a) and (6c) and then (6b) and (6d).

Japanese:

(6a) Mt. Fuji is world famous looks beautiful.

(6b) In my country hasn't army, navy and air force.

Spanish:

(6c) The fountain of work in Venezuela is petroleo; is our principle fountain of work.

(6d) In Venezuela is holiday both days.

It appears that for both Japanese and Spanish learners subject marking is unnecessary once the topic is identified. And of course this is a reflex of subject marking constraints in their respective native languages.

Conclusion

At this point a recapitulation of the major developments of this chapter is in order. We have here an outline of a model of adult concept learning which looks like an excellent candidate for adoption and adaptation as a model of adult language learning. Within that model we have an account of the notion of transfer together with several examples of language learner production which can be explicated using this account. It is an approach to transfer in which the notion of transfer as a process is replaced by the notion of transfer as a constraint imposed by previous knowledge on a more general process, that of inferencing. Thus it is a simpler model than one in which transfer is viewed as ontologically distinct. We also have an expanded notion of previous knowledge: the basis from which one infers the domain from which the correct hypothesis will be taken to account for new data. This previous knowledge includes L1 knowledge and also the learner's conceptualization of the target language.

Presumably, the search for tests of the model will leave us with sufficient work to do in the future so that we won't be disturbed if, somewhere along the way, we discover that the process of transfer has disappeared.

NOTES

1. This chapter has benefited a great deal from comments on and criticisms of an earlier draft by Susan Gass, Peter Jordens, Barry McLaughlin, Carolyn Madden, and Robert Bley-Vroman.

2. Such a model will, of course, have to fulfill other conditions, not the least of which are: to provide an explanation of the fact that while children almost universally reach native speaker proficiency in their first language, adults rarely do so in their second language; and to account for data of adult learner production which appear to be developmental. This, however, is a book on language transfer, and I will not address these issues here.

3. This kind of learning problem, in which the subject does not know what the solution will be but has available certain principles for discovering it, may be contrasted with learning problems in which the solution is known at the outset and the task is to figure out how to arrive at the solution.

4. Some of the differences Miller pointed out (between child first language learning and adult concept learning) I have actually listed as similarities when comparing adult second language learning and adult concept learning.

5. If it were true that visual and verbal learning really emphasized different kinds of patterning, this would be useful to know. I venture to guess that most adults who learn languages via the classroom get as much visual as verbal input. What we need are visual language learning studies (in which students learn only through the written medium) to compare with verbal ones to see what, if any, the differences are.

6. Response sets are exhibited by systematic patterns in the behavior of a subject that persist despite disconfirmation.

7. Braine (1971), for example, argues that people learn languages without taking disconfirming evidence (negative data) into account. If this were true, any H-testing model would have to be abandoned as an account of language learning, since all such models depend crucially on the learner's making use of disconfirmations to alter or reject wrongly formulated hypotheses. The

evidence that Braine uses to support his claim, however, is not convincing.

8. I want to make it clear at this point that I am not claiming that speakers "know" they have these internal categories/domains, but only that in their behavior that they act in such a way as to lead the investigator to infer that they have such categories/domains. And in exactly the same way psychologists say people act as if they have conceptual domains, linguists say people act as if there are linguistic categories.

9. There may actually be evidence for this kind of transfer in what I call *word salad* utterances produced by learners which upon attempted analysis provide few or no clues to what syntactic structure the learner was trying to produce. Examples of word salad sentences abound in learner production; one example produced by a learner of English is: "Some American schools could careless even the instructors if our English knowledge and background are inadequate and limited vocabularies as well." The problem with sentences like this one is that the syntactic structure is so obscure that semantic interpretations abound. Two possible interpretations, for instance, are: (1) that some American schools could even employ instructors who are not very knowledgeable since with our inadequate English and limited vocabulary, it wouldn't make any difference; (2) that in some American schools even the instructors could care less if our English knowledge and background are inadequate and we have limited vocabularies as well. My suspicion is that the researcher has few clues here precisely because the learner's attempt was in the wrong domain.

10. I have in mind here the possibility that the learner has constructed a hypothesis which leads to the production of a structure which is neither native-like nor target-like, that is, a typical interlanguage structure. If that hypothesis is in force when a second related hypothesis is being constructed, it may very well influence the form of the second hypothesis.

11. I have not had a Farsi-speaking student in any class I've taught who did not do this, and I have had many Farsi speakers as students. Of course, it would not be expected of beginning-level students who have not yet reached the stage of embedded clause production.

12. Gass (1979, 1983) has an alternative and interesting explanation involving the claim that there is no epenthetic pronoun in the subject in Farsi, and that the learner transfers the general case to English (direct object, indirect object, object of preposition) and then generalizes to the exception (subject). We await further developments in the study of Farsi dialects.

13. This is, of course, in addition to other relative clause markers, such as the relative pronouns and the position of the relative clause.

14. It should be noted that the verbs in these sentences are all transitive verbs in Arabic and allow passivization.

REFERENCES

Bever, T.G. 1970. The cognitive basis for linguistic structures. *Cognition and the Development of Language* ed. by John R. Hayes. New York: John Wiley & Sons.

Braine, M.D.S. 1971. On two types of models of the internalization of grammars. *The Ontogenesis of Grammar* ed. by D. Slobin. New York: Academic Press.

Bruner, J., J. Goodnow, and G. Austin. 1956. *A Study of Thinking.* New York: John Wiley & Sons.

Day, R., A. Chenoweth, A. Chun, and S. Luppescu. 1981. Native speaker feedback to ESL errors. Paper delivered at AAAL Symposium on the Implications of Research for the Foreign Language Classroom, ACTFL Annual Meeting. Denver, Colorado.

Dulay, H., and M. Burt. 1974. Natural sequences in child second language acquisition. *Working Papers in Bilingualism* No. 3. Toronto. Ontario Institute for Studies in Education.

Estes, W. K. 1960. Learning theory and the new mental chemistry. In Levine 1975. Adapted from *Psychological Review* 67.207-223.

Gass, S. 1979. Language transfer and universal grammatical relations. *Language Learning* 29.2:327-344. Reprinted in *Language Transfer in Language Learning* ed. by S. Gass and L. Selinker 1983. Rowley, MA: Newbury House.

Hakuta, K. 1976. A case study of a Japanese child learning English. *Language Learning* 26.321-351.

Hayes, J.R., ed. 1970. *Cognition and the Development of Language.* New York: John Wiley & Sons.

Jordens, P. 1977. Rules, grammatical intuitions and strategies in foreign language learning. *Interlanguage Studies Bulletin* 2.

Katz, J.J. 1966. *The Philosophy of Language.* New York: Harper.

Kellerman, E. 1979. Transfer and non-transfer: Where are we now? *Studies in Second Language Acquisition* 2.1:37-58.

Levine, M. 1975. *A Cognitive Theory of Learning: Research in Hypothesis Testing.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Long, M. 1981. Input, interaction, and second language acquisition. *Native language and foreign language acquisition* ed. by H. Winitz. *Annals of the New York Academy of Sciences* 379.

McNeill, D. 1979. *The Conceptual Basis of Language.* Hillsdale, N.J: Lawrence Erlbaum Associates.

Miller, G.A. 1967. *The Psychology of Communication.* New York: Basic Books.

Moeser, S.D. 1977. Semantics and miniature artificial languages. *Language Learning and Thought* ed. by J. Macnamara. New York: Academic Press.

Reber, A. and S. Lewis. 1977. Implicit Learning: An analysis of the form and structure of a body of tacit knowledge. *Cognition* 5.333-361.

Restle, F. 1962. The selection of strategies in cue learning. In Levine 1975. Adapted from *Psychological Review* 69.329-343.

Schachter, J. 1974. An error in error analysis. *Language Learning* 24.2:205-214.

Schachter, J. and B. Hart. 1979. An analysis of learner production of English structures. *Georgetown University Papers on Languages and Linguistics* 15.

Schachter, J. and W. Rutherford. 1979. Discourse function and language transfer. *Working Papers in Bilingualism* 19. Toronto. Ontario Institute for Studies in Education.

Wason, P.C. and P.N. Johnson-Laird. 1972. *Psychology of Reasoning.* London: B. T. Batsford Ltd.

Verification of Language Transfer

Josh Ard and Taco Homburg[1]

The principal thesis of this chapter is that, given proper analytic methods, it is possible to say that similarities between Lexical items of a target language and an L1 which are greater than the similarities between lexical items of the target language and a different L1 *always* lead to significantly different developmentally based response curves (by speakers of the two native languages) to questions on a standardized test involving the relevant lexical items in the target language. In short, transfer always occurs under these conditions of greater similarity. These conditions are not *necessary* for transfer, however, because speakers of a language with a large number of lexical items similar to those in the target language sometimes have significantly different responses to other items as well. That is, we can say where native language backgrounds will have an effect, but we cannot say where they will not.

This chapter presents results of a procedure for measuring and verifying native-language-induced effects in the acquisition of the English lexicon. The data are taken from responses by 194 Spanish-speaking and 100 Arabic-speaking subjects who took one version of the Michigan Test of English Language Proficiency, a standardized test given in many parts of the world. We argue that it is necessary to compare speakers of two different languages to demonstrate that a native- language-based effect is present. The statistical procedure used to analyze the data (weighted least squares chi-square with a test for interaction) allows an investigator to examine stages of learning, a necessity for demonstrating transfer. Moreover, the entire vocabulary section of the test was analyzed, not just items where transfer might seem likely. This is necessary in order to determine what sense of determinism is present. Furthermore, a detailed measure of cross-language lexical similarity was developed and tested. It was found that test questions containing a basic word (defined below) of sufficient similarity to a native language word all witnessed significantly different response patterns between Spanish and Arabic learners. However, Spanish speakers did a better job of answering the test as a whole, even on questions where none of the relevant words resembled Spanish words.

The data for this study were taken from the responses of 194 Spanish-speaking and 100 Arabic-speaking adult learners of English as a second language to items on the vocabulary section of one version (form G) of the Michigan Test of English Language Proficiency (henceforth the Michigan Test). A complete transcript of this portion of the test is included in Appendix A. There are two types of questions in this section. One type, as exemplified by question (41), requires the test taker to find a synonym from among four possible responses to an italicized word given within the context of a sentence.:

(41) He lives in a *spacious* apartment.
a) modern
b) large
c) small
d) expensive

The test taker then darkens the space on an answer sheet corresponding to the best synonym for *spacious* in the given sentence. We henceforth will refer to questions of this type as *synonym*-type questions. The other type of question, as exemplified by question (42), differs in that no word is italicized in the contextualizing sentence, but rather a blank is present. in this type of question, the test taker must choose one word from among the four possible responses that could be inserted into the given sentence:

(42) Before you plant the field you must _____ it.
a) shatter
b) pinch
c) plough
d) promote

We henceforth refer to this type of question as *fill-in-the-blank* questions.

There are several advantages in using student responses to questions on a standardized test of this sort to verify and measure transfer in language learning (acquisition or attainment). These are as follows:

1. The use of this sort of data base enables the researcher to compare a large number of subjects performing an identical task. One disadvantage of both naturalistic observation and typical performance tests is that different subjects may be "aiming" at different targets and thus perform essentially different tasks (cf. Gass 1980). On a test like this, every subject is forced to make the same narrow judgment--which word could best be inserted into a given sentential context.
2. There is also little possibility of avoidance on this type of task. In normal language production, if a second language learner is unsure of a word or construction, there are possibilities to express things differently, avoiding the problematic word or construction (Schachter 1974, Kleinmann 1977). In this sort of task, one is limited to choosing among four responses; there is no possibility of choosing a fifth instead. Therefore, there is better information about whether or not a word is actually in a learner's lexicon than one could obtain from mere observation. In the latter case it is always possible that the learner knew the word but was hesitant to use it.

3. A third advantage of this type of task is that experimenter's bias is totally eliminated. The data for this particular study are taken from tests that were taken many years ago. We had no contact whatsoever with the test-taking situation or with the test design. For this reason there could have been no suitable, unintended signals given to the test takers about the responses we would have preferred.

In this particular study we have investigated the responses of Spanish speaking and Arabic-speaking learners of English. We suggest that it is necessary to compare the performance of large groups of subjects with two or more different first languages in order to verify claims of language-background-induced transfer in learning a second language. First, if speakers of only one language are investigated, it is impossible to prove that speakers of a different first language background would not have performed identically. Speakers of a different language are needed as controls to demonstrate that language background really is the major contributing factor. Second, it is necessary to investigate the performance of large groups of subjects. If only one subject or only a small handful of subjects are investigated, there is always the possibility that individual variables, not language-based variables, are the major contributing effect. By comparing the performance of large groups of subjects with different language backgrounds, one can reasonably ascertain that the differences in performance are due to the differences in language background itself.

Spanish and Arabic are particularly good languages to investigate in verifying and measuring differences in lexical learning due to language background. First, Spanish and Arabic differ considerably in the relative similarity of their lexicons to the English lexicon. Of the italicized target words and possible responses in this version of the Michigan Test, approximately 60 percent of the English words resembled Spanish words in form *and* meaning. On the other hand, only 1 percent of the English words resembled Arabic words in form *and* meaning. This objective difference is also reflected in the psychotypologies of Spanish and Arabic learners of English (Kellerman, 1983). From informal interviews with Spanish-speaking and Arabic-speaking learners of English, we discovered that Spanish speakers assume that if a Spanish word resembles an English word, that English word probably has roughly the same meaning as the Spanish word, while Arabic speakers do not make this assumption. Arabic speakers assume formal resemblance to an Arabic word is due to chance.

A second advantage of comparing responses of Spanish-speaking test takers and Arabic-speaking test takers is that large numbers of subjects from both groups are available. Dutch and Zulu would have served just as well, but there were not enough test takers of these language backgrounds to enable proper statistical methods to be applied to the data.

The statistical procedure used in this study was weighted least squares chi-square analysis over proficiency levels determined by z-scores with a test for interaction. The procedure enables one to determine if the *rates of change* of responses to any of the five possible answers (*a*, *b*, *c*, *d*, or leaving the answer sheet blank for that item) differ between Spanish-speaking test takers and Arabic-speaking test takers. If the rates of change differ, this is evidence for a language-induced transfer effect. If the rates of change do not differ, there is no evidence for any language-induced transfer effect.

So far as we are aware, this particular statistical procedure has not previously been used in analyzing possible instances of transfer in second language acquisition. Therefore, it behooves us to explain the procedure in some detail and to discuss its advantages.

In accord with the general sense of the term transfer[2], ideally one should investigate and measure instances of *learning*. Nevertheless, reports of language transfer generally consider only the language abilities witnessed by some learners at one point in time. Presumably language abilities are the results of prior learning (with perhaps some contributions by innate mental capabilities), but these language abilities do not directly reflect either the process of learning or the stages through which learning progressed. A preferable method is one which allows a comparison of language abilities progressing through stages of development. The statistical method applied in this investigation allows this very type of inquiry.

The Arabic-speaking and Spanish-speaking test takers were divided into five proficiency levels each based on z-scores rather than raw scores. A z-score is essentially a measure of how far above or below the mean a raw score is, as measured in terms of standard deviations.[7] The reason for using z-scores to determine proficiency levels rather than raw scores is that the overall scores of Spanish speakers were considerably higher than those of Arabic speakers. The Arabic speakers averaged 18.01 correct answers (out of 40 possible), with a standard deviation of 9.06 (see figure 1). For Spanish speakers the average number correct was 23.25, with a standard deviation of 6.81 (see figure 2).

Figures 3 and 4 demonstrate the difference between comparing raw scores and z-scores. Figure 3 is the superimposition of figure 1 upon figure 2. If both groups were divided into proficiency levels based on raw scores, then Spanish speakers would be compared with Arabic speakers of relatively high proficiency within the entire group of Arabic speakers. Figure 4 is a comparison of Arabic and Spanish speakers matched for z-scores. Here, although the raw scores within each quintile are different, Spanish and Arabic speakers of equivalent relative lexical proficiency within their own language group are compared. This lessens the effect of the overall higher scores for Spanish speakers.

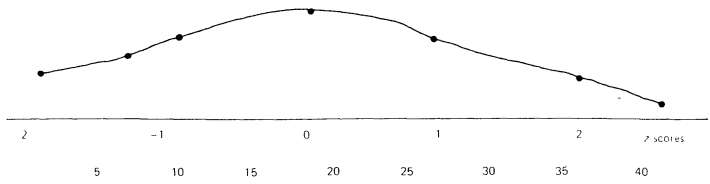


Figure 1 Arabic Scores

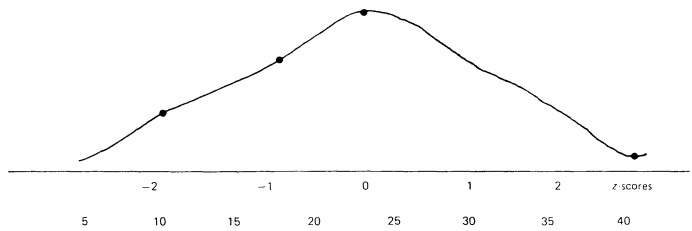


Figure 2 Spanish Scores

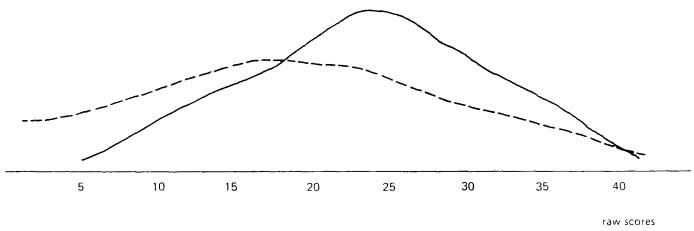


Figure 3 Spanish (Solid Line) Compared with Arabic (Broken Line), Based on Raw Scores

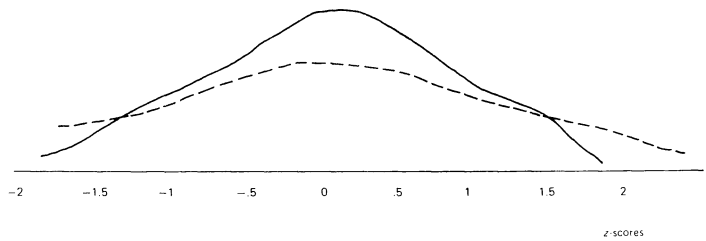


Figure 4 Spanish (Solid Line) and Arabic (Broken Line) Compared Based on z-scores

In general one would expect that as learners become more proficient, the number of correct responses would steadily climb. Similarly, with increasing proficiency, the number of incorrect responses (that is, marking a distractor as correct) would steadily fall. What is particularly interesting to notice, however, is when the *shape* of the curves for correct responses (and for distractors) measured across proficiency levels varies *appreciably* between the Spanish-speaking and Arabic-speaking groups. This would mean that the overall path of lexical learning found in speakers of the two languages differs. if the rates of change are essentially the same for the two groups, there is no evidence that being a native speaker of one of the languages either favors or penalizes a learner acquiring the portion of the English lexicon measured by that particular question.

Weighted least squares chi-square analysis with a test for interaction[6] enables these differences in response-curve shapes to be measured. In general one might expect that if the overall number of correct responses to a question is much higher for speakers of one language, then there would be a difference in the curves for rate of response. This does appear to be the normal case, but there are other possibilities. It is possible for speakers of one language to have a "head start" over speakers of the other language but for speakers of both languages to improve their scores at roughly the same rate. This is the pattern witnessed in responses to question 66 (see figure 5). Since we are concerned with *learning* across proficiency levels, not with overall percentage of correct responses, this item shows no interaction between language background and responses. In other words, being a Spanish or an Arabic speaker did not affect how well or how quickly one went about improving the knowledge reflected in the question. There was only an initial difference, not a difference which occurred during the learning process.

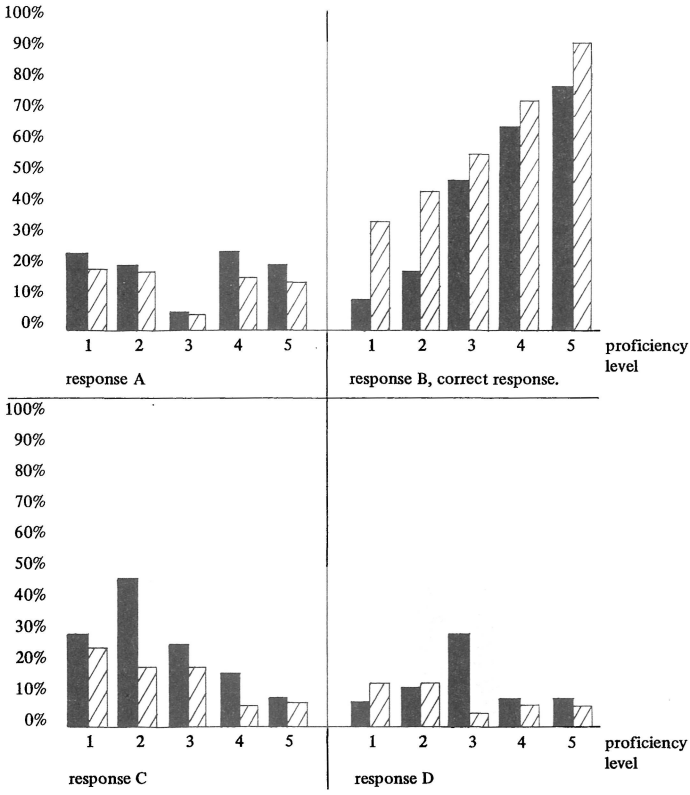
On the other hand, there can be differences in response curves signifying an interaction between language background and responses to the question even in situations in which the overall average scores for the two groups are similar. Roughly 70 percent of both the Spanish speakers and the Arabic speakers answered question (43) correctly, but the response curves are very different (see figure 6).

The Arabic speakers in the lowest proficiency quintile gave more correct responses than the Spanish speakers in the lowest proficiency quintile, but by the last proficiency quintile the relationship was reversed: the Spanish speakers were considerably better. Averaging over all five proficiency quintiles the means are roughly the same, but clearly there is a different pattern of learning exemplified here. One group started high but progressed slowly, while the other group began low but progressed rapidly. Since we are concerned with differences in *learning*, this is an example of significant interaction between language background and the learning of the English lexicon.

Item 66: an example of a difference between the percentage of Arabic speakers and the percentage of Spanish speakers who answered the item correctly, yet with no significant interactions on any of the responses.

depicts the percentage of Arabic speakers who chose a particular response;

depicts the percentage of Spanish speakers who chose a particular response.



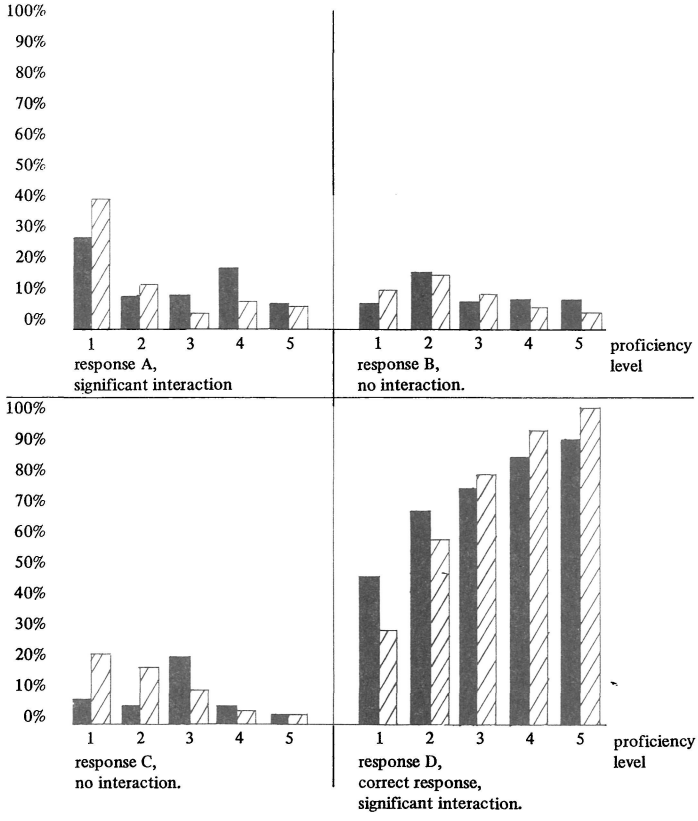
Percentage of Arabic speakers who answered this item correctly is 38.00%.
Percentage of Spanish speakers who answered this item correctly is 55.84%.

Figure 5

Item 43: an example of no difference in the percentage of Arabic speakers and of Spanish speakers who answered the item correctly, yet with significant interactions on response A and response D, the correct response.

■ depicts the percentage of Arabic speakers who chose a particular response;

▨ depicts the percentage of Spanish speakers who chose a particular response.



Percentage of Arabic speakers who answered this item correctly is 71.00%.
Percentage of Spanish speakers who answered this item correctly is 70.56%.

Figure 6

Studies of native language influence on second language acquisition should consider all cases of interactions between language background and response-curve shapes. Unfortunately, most studies of language transfer are restricted to forms and constructions which a researcher felt should or could induce transfer. in the case of lexical acquisition, one could first determine lexical items in English that are similar to lexical items in another language and test to see whether speakers of that language respond differently to those items than do speakers of languages without similar lexical items. One problem with that methodology is that similarity, like beauty, may exist in the eye of the beholder, but have no objective existence. For experimental purposes, it is preferable to have objective measures of similarity.

In order to develop a measure of similarity, we first determined which of the possible responses (4 x 40, or 160 in all) and which of the italicized key words in synonym-type questions (21 in all) resembled Spanish words. Several Spanish speakers attending the English Language Institute of the University of Michigan were asked to give any similar Spanish words to any of the 181 relevant words[3]. The Spanish words they suggested were then subjected to further analysis.

Two different parameters of similarity were developed, one based on form and the other on meaning. Each parameter had five separate values, ranging from 1 (greatest similarity to the English word) to 5 (least similarity to the English word). Combining both parameters, it was possible to assign each word to one unique slot in a 5 x 5 matrix of similarity.

The formal parameter chosen is based on orthographical and morphological similarity. Orthographic representation was chosen rather than phonetic or phonological representation, because (1) the words were present visually in their orthographic form on the test, and (2) there is no evidence of the test takers' knowledge of English orthoepic norms; so we could not be sure how they would pronounce these words.

A value of 1 in orthographic similarity indicates that the Spanish word is orthographically identical to the corresponding English word. Only one word (*candor*) qualified for this value.

A value of 2 indicates that the Spanish and English words differ only in grammatical ending and thus have identical stems. in assigning words this value silent -e at the end of English words was ignored. Several words qualified for this value:

Spanish word	English word
moderno	modern
remover	remove
rito	rite
problema	problem
resentir	resent
interpretar	interpret
copiar	copy
falso	false
emiter	emit
evader	evade
infectar	infect
divider	divide
accidentalmente	accidentally
plantas	plants
competente	competent
honesto	honest
admirar	admire
largo	large
suspender	suspend
quieto	quiet

A value of 3 indicated that there was a regular orthographic correspondence in the stem between the English and Spanish words. Examples of regular orthographic correspondences include *--cion / --tion*, *--ce/ --cia*, *--es/ --s*. Words receiving this value are:

Spanish word	English word
espacioso	spacious
retornar	return
exilado	exiled
dispersado	dispersed
reprochar	reproach
experiencia	experience
famoso	famous
decoracion	decoration
filamiento	filament
fraccion	fraction
asumir	assume
influencia	influence
transformado	transformed
margen	margin
extravagancia	extravagance
transicion	transition
parentes	parents
deshonesto	dishonest

Words receiving a value 4 for orthographic similarity were relatively close, but witness an irregular orthographic relationship with English. Examples are:

Spanish word	English word
explotar	exploit
sorpresa	surprise
silencioso	silent
rico	rich
justificar	justify
sidra	cider
detener	detain
desplazar	displease*

*indicates that there is really a closer English word.

Words receiving a 5 were orthographically and/or morphologically more distant:

Spanish word	English word
a proposito	purposely
promover	promote
incluir	include
descubrimiento	discovery
imitar	imitate
enmendar	amend
encomendar	commend
racionar	ratio *
incremento	increase *
revisar	review*
postrado	prostrate
sucesivo	successful *
emerger	merge*
expensas	expensive*

*indicates that there is really a closer English word.

The other five-step scale measures semantic similarity between the Spanish word and the corresponding English word. The meanings of the Spanish words were checked in a standard Spanish monolingual dictionary (*Real Academia Espanola Diccionario de la lengua espanola*, Madrid, 1956). A value of 1 indicates that the primary meaning of the word in Spanish (as reflected in a first listing in the Spanish dictionary) is essentially the same as the meaning of the word in English. The majority of the Spanish words received the value of 1.

A value of 2 indicates that the primary meaning of the word is different in Spanish but that the second listed meaning is the same as the English meaning. An example of this sort is *plantas*, whose first meaning is "sole of the foot" and whose second meaning is "plant." *Extravagancia* was also assigned this value, because the primary meaning includes nuances such as "disordered or disarranged in thought and act," different nuances from those associated with the English word.

Figure 7 Examples of Items Classified According to the Matrix of Similarity

	candor (64c)			
moderno (41a)	plantas (70b)	competente (51k)	largo (41b, 80d)	
remover (43d, 77c)		honesto (63d)	suspender (46c)	
rito (47c)		admirar (67d)	quieto (80a)	
problema (49c)				
resentir (55a)				
interpretar (55c)				
copiar (59d)				
falso (57c)				
emiter (61b)				
evader (61d)				
infectar (66c)				
divider (79b)				
accidentalmente (48d)				
espasioso (41k)	extravagancia (49k)		transicion (45k)	deshonesto (63c)
retornar (43c, 59c)			parientes (70c)	
exilado (44a)				
despersado (44b)				
reprochar (46d)				
experiencia (49a)				
famoso (51b, 57d)				
decoracion (58b)				
filamiento (58d)				
fraccion (75d)				
asumir (77b)				
infuencia (78c)				
transformado (44d)				
margen (75c)				
explotar (46b)			sidra (64d)	desplazar (80b)
sorpresa (49d)			detener (73k)	
silencioso (53d)				
rico (74b)				
justificar (78d)				
a proposito (48c)		encomendar (55d)	racionar (47a)	tachar (43k)
promover (42b)			incremento (54c)	sucesivo (63a)
incluir (43a)			revisar (54d)	emerger (79k)
descubrimiento (45a)		postrado (65k)	expensas (41d)	
imitar (55b)				
enmendar (59k)				

Increasing orthographic similarity toward the top
Increasing semantic similarity toward the left

A value of 3 indicates that the tertiary (or lower) meaning of the word in Spanish is equivalent to the meaning of the English word. For example, the first meaning of *competente* is "adequate," the second is "competitor, competitive," and the third is "apt." The first meaning of *honesto* is "decorous," the second "modest," and the third "reasonable, just." Other words receiving this value are *admirar* and *encomendar*.

A value of 4 indicates a more distant meaning relationship, typically involving either an expansion or contraction of the Spanish meaning. For example, *parientes* includes all relatives. *Sidra* can only be hard, alcoholic cider. Other words classified with this value are *largo*, *suspender*, *quieto*, *transicion*, *detener*, *racionar*, *incremento*, *revisar*, and *postrado*.

Finally, a value of 5 indicates even greater distance. *Tachar* means "cross out." Several of these words are words whose meaning more closely resembles another English word (*desplazar* ="displace" not "displease") (*sucesivo* ="successive" not "successful") (*emerger* = "emerge" not "merge"). These are traditionally called "false friends." Other examples in this category are *deshonesto* and *expensas*.

A combined matrix showing how items are classified into the 25 possible slots is included as figure 7.

There was no need to construct such a chart of similarity for Arabic. A native Arabic speaker was able to find only two Arabic words that resembled any of the relevant 181 English words: *madaniy* "modern" and *qurmuziy* "crimson." Neither is particularly close to English orthographically, especially the latter (even though the English word is ultimately borrowed from Arabic).

Results and discussion. There is definite evidence for a native language influence on second language acquisition. There are significant differences in the response curves for correct responses to synonym-type questions in 57 percent of all items. For fill-in-the-blank-type questions significant differences in the response curves for correct responses are found 58 percent of the time. These significant differences in response curves demonstrate that language background does play a role in lexical learning.

There are certain situations (determined by the locus of certain Spanish words in the matrix of similarity) for which we can say absolutely that interactions in the response curves for the correct responses will occur. Thus, we can say that transfer will be observed in those instances. However, when these conditions are *not* met, there is no determinacy: sometimes interactions occur; sometimes they do not.

For both types of questions the most important variable to use in saying whether or not interaction in correct curve shape occurs is the classification of a basic word. For synonym-type questions the basic word is the underlined key word. For fill-in-the-blank-type questions the basic word is the correct response. For both types of questions if the key word resembles a Spanish word that is classified in *either* the first three rows or the first three columns, there is a significant difference

between the Arabic and Spanish response curves to the correct response. This is represented graphically in figures 8 and 9. The area where the values fail to indicate interaction (i.e., outside the first three columns and first three rows or, equivalently, the 2 x 2 square in the lower right-hand corner) is separated from the rest of the matrix by a box.

Interestingly, no good predictions can be made based on nonbasic words in a question[5]. Even the nature of the correct response in synonym-type questions is not a good guide (see figure 10). An item occupying slot 21 (orthographic similarity 2, semantic similarity 1) is as similar to an English word as any item in the data. Yet one out of two correct responses to synonym-type questions which were classified with this value occurred in a question for which there was no interaction[4].

Figure 8 Percentages of Interaction in Correct Responses in Fill-in-the-Blank-Type Questions Based on the Classification of the Correct Response According to the Matrix of Similarity

	1	2	3	4	5
1	n.e.	n.e.	n.e.	n.e.	n.e.
2	100 (2)	n.e.	n.e.	100 (1)	n.e.
3	100 (1)	n.e.	n.e.	n.e.	n.e.
4	n.e.	n.e.	n.e.	0 (1)	n.e.
5	n.e.	n.e.	n.e.	100	n.e.

Semantic similarity horizontally coded
Orthographic similarity vertically coded

This chart indicates the percentage of interactions (i.e., significant differences) found in fill-in-the-blank-type questions for which the correct response is classified according to the relevant cell in the matrix of similarity. In other words, an entry of 100 for cell 31 (row 3, column 1) indicates that there is significant interaction in *all* responses to those fill-in-the-blank questions in which the correct response is similar to some Spanish word to this degree (third degree of orthographic similarity and first degree of semantic similarity). n.e. indicates that there were no examples of this type in the data. A number in parentheses indicates the number of tokens on which the percentage is based. The only area of the matrix in which there might not be interaction is the 2 x 2 square in the lower right-hand corner. In this square there is sometimes interaction, but sometimes no interaction.

Figure 9 Percentages of Interaction in Correct Responses in Synonym-Type Questions Based on the Classification of the Key Word According to the Matrix of Similarity

	1	2	3	4	5
1	n.e.	n.e.	n.e.	n.e.	n.e.
2	n.e.	n.e.	100(2)	n.e.	n.e.
3	100 (1)	100 (1)	n.e.	100 (1)	n.e.
4	n.e.	n.e.	n.e.	0 (1)	n.e.
5	100 (1)	n.e.	n.e.	n.e.	50 (2)

Semantic similarity horizontally coded
Orthographic similarity vertically coded

The explanation to the chart is found below the chart in Figure 8, except that here the questions are classified according to the key word (the underlined word) in a synonym-type question. Again, it is only examples from the 2 x 2 square in the lower right-hand corner that can fail to show interaction. Examples from elsewhere on the chart *always* show interaction.

Figure 10 Percentages of Interaction in Correct Responses in Synonym-Type Questions Based on the Classification of the Correct Response According to the Matrix of Similarity

	1	2	3	4	5
1	n.e.	n.e.	n.e.	n.e.	n.e.
2	50 (2)	n.e.	n.e.	100 (1)	n.e.
3	n.e.	n.e.	n.e.	n.e.	n.e.
4	100 (1)	n.e.	n.e.	n.e.	n.e.
5	100 (1)	n.e.	n.e.	n.e.	n.e.

Semantic similarity horizontally coded
Orthographic similarity vertically coded

The explanation of the entries on the chart is found below the chart in Figure 8, except that here the classification is based on the correct response to synonym questions. There is no straightforward way to classify the portions of this matrix according to the percentages. Of the two examples in cell 21, one shows interaction and the other does not. This is very different from the situation in the other two charts. Therefore, the classification of the correct response in synonym-type

questions is not very valuable in determining whether or not interaction in the response curve will occur.

Another interesting result is that Spanish speakers do better overall even for questions in which neither the key word (if any) nor any of the possible responses resemble a Spanish word. There were 10 questions on the vocabulary section of the test in which none of the relevant English words resembled Spanish words. Nevertheless, the Spanish speakers received significantly higher average scores ($p < .05$, based on the Wilcoxen signed sums of tank test) than did the Arabic speakers. This result requires some amplification. The Spanish speakers did better even without similar lexical items to help them. Since they did better, there is definite evidence for a native language (facilitating) effect. Yet, since there are no similar items, the conditions for language transfer are not met. This demonstrates how theory-laden the term language transfer is. Built into the term itself is a theoretical assumption about what types of situations will induce native-language-based effects.

This particular finding is not unique. Popov (1978) found that Bulgarians learning Russian scored better on both lexical items similar between the two languages and items dissimilar, compared with a group of Vietnamese-speaking Russian learners. Perhaps these results are due to overall closeness in lexical structuring. Perhaps the overall structure of Spanish and English and Bulgarian and Russian is much closer than that of Arabic and English and Vietnamese and Russian, especially in lexical semantics (cf. Ard 1982 for a discussion of this type of situation). perhaps there is a "finite effort" effect. If the Spanish speakers can learn some words (the most similar words) easily, then maybe they have more time at their disposal to concentrate on learning "hard" words. Meanwhile, the Arabic speakers are forced to spend their learning resources on the words that come easy to the Spanish speakers. More data are required here. In general, it appears that the methodology found in most studies of transfer in second language acquisition precludes questions like this from even being addressed.

There are several points we wish to highlight. First, there is abundant evidence for native language influence in lexical learning. We can say where significant differences will occur, although we cannot say absolutely where they will not. Second, these results crucially depend on a matrix of similarity between native language and target language lexical items. Third, for this type of test, the similarity of key words in synonym-type questions and of correct responses in fill-in-the-blank questions is the most crucial. Fourth, there is evidence for a native language effect even where there is no overt similarity between native and target languages.

We suggest that there are two major reasons why transfer in second language learning has proved to be such an elusive concept, one that many researchers have claimed not to have witnessed in their data. First, definitions of

language transfer have been needlessly restrictive, eliminating much of what is most important. Second, the devices used for measuring native language influence have been too subjective, too crude, and not sufficiently verifiable. Once better measures are used to investigate native language influence, we predict that the effects of one's native language will be shown to be pervasive in second language performance and competence.

NOTES

1. We would like to thank Susan Gass and Larry Selinker for editorial comments on an earlier version of this chapter.

2. One cannot speak easily of the *history* of transfer, because the term has meant many different things at different periods. For this reason, it is preferable to talk of the genealogy of transfer than of its history (cf. Foucault 1977 and Nietzsche 1887). That is, it is better to talk of the past phenomena that have contributed to the contemporary term and what is meant by it.

3. [1]. $z = 0$ is the score equal to the group mean. $z = 1$ is the score one standard deviation higher than the mean, while $z = -1$ is the score one standard deviation lower than the mean. Since the distributions on the vocabulary subtest approach normalcy, by using z-score cutoff points of -.84, -.26, +.26, +.84, and +6.00 we can ensure that approximately 20 percent of the total population is found in each of the five proficiency levels.

4. For details see Landis et al. (1976) and Roscoe (1975).

5. We would like to thank Pat Rounds for helping gather these data.

6. These results may reflect the test design. In synonym items the key word is of a frequency of 5 to 9 times per million as defined by the Thorndike-Lorge word frequency list. The answers are ail of a frequency of 50+ per million. In fill-in-the-blank items, all four answer choices are of a frequency of 5 to 9 times per million. The assumption is that words with a frequency of 50+ times per million should be familiar to most test takers, but the less frequent words might not be.

7. There is another source of data that suggests that key words are more basic than correct responses in synonym-type questions. Recall that approximately 57 percent of the correct response curves in synonym-type questions show interaction. When the key word is not similar to a Spanish word, the percentage of interactions drops to 40 percent. When the correct response is not similar to a Spanish word, there is interaction in 67 percent of the cases, a figure even greater than normal. Thus if the key word is not similar, this "pulls down" the percentage of interactions, but the nature of correct responses to synonym-type questions does not "pull down" the interaction ratio at all.

The correct response is the basic word in fill-in-the blank-type questions. In general, interactions occur in 58 percent of the fill in the blank-type questions, but if the correct response is not similar to a Spanish word, the percentage of response curves with interaction drops to 40 percent. This is virtually the same degree of "pulling down" found for dissimilar key words in synonym-type questions.

APPENDIX A

VOCABULARY

There are two types of vocabulary items in this test. In the first type you are given a sentence followed by four words or phrases. You are to find the word or phrase that is closest in meaning to the italicized word (or words) in the sentence and that could be used in the sentence without changing its meaning greatly.

EXAMPLE B: It's too windy to go for a *stroll.*

a) swim
b) sail
c) drive
d) walk

The word "walk" means about the same thing as "stroll" in this sentence. The sentence "It's too windy to go for a walk," means the same thing as "It's too windy to go for a stroll." To show that *d, walk,* is the correct answer, a cross has been made in the space next to *d* for Example B on the answer sheet.

In the other type of item you are given a sentence with one word omitted and a list of four words. You are to find the word that would best complete the sentence.

EXAMPLE C: Because of the storm and rough waves, it would be foolish to go out sailing today in a small -----.

a) automobile
b) house
c) boat
d) beast

The word "boat" fits best in the sentence so that it reads, "Because of the storm and rough waves, it would be foolish to go out sailing today in a small boat." To show that *c, boat,* is the correct answer, a cross has been made in the space next to *c* for Example C on the answer sheet.

Answer all of the questions of Part II in this manner. Mark only one answer for each problem.

41. He lives in a *spacious* apartment

a) modern
b) large
c) small
d) expensive

42. Before you plant the field you must _____ it.
    a) shatter
    b) pinch
    c) plough
    d) promote
43. Please *detach* the top half.
    a) include
    b) forget
    c) return
    d) remove
44. At the request of the police, the huge crowd _____ and everyone went home.
    a) exiled
    b) dispersed
    c) banished
    d) transformed
45. We're entering a period of *transition*.
    a) discovery
    b) trouble
    c) change
    d) travel
46. He couldn't drive because his license was _____ for one month.
    a) subdued
    b) exploited
    c) suspended
    d) reproached
47. In this school the _____ of men to women is 3 to 1.
    a) ratio
    b) relic
    c) rite
    d) rally
48. Joe *deliberately* parked by the "no parking" sign.
    a) angrily
    b) fearfully
    c) purposely
    d) accidentally
49. Mr. Reid thought his wife's trip was a great *extravagance*.
    a) experience
    b) waste
    c) problem
    d) surprise

50. I asked John if he wanted coffee, but he _____ his shoulders and said he didn't care.
    a) shrugged
    b) chuckled
    c) crouched
    d) wagged
51. Mark is a very *competent* basketball player.
    a) fast
    b) famous
    c) able
    d) tall
52. In the last 100 years a lot of progress has been _____ in medicine.
    a) made
    b) worked
    c) done
    d) run
53. It was the very first time I ever saw her *mute*.
    a) shocked
    b) crying
    c) smiling
    d) silent
54. Production was *inaugurated* last week.
    a) started
    b) stopped
    c) increased
    d) reviewed
55. He tries to be nice but I _____ his manner
    a) resent
    b) imitate
    c) interpret
    d) commend
56. We loved to listen to him talk because he was so _____ .
    a) tawny
    b) watery
    c) witty
    d) wiry
57. Her smile was *counterfeit*.
    a) bitter
    b) friendly
    c) false
    d) famous

58. It's not true, but Harry thinks it is. His belief in it is only a _____.
    a) flounder
    b) decoration
    c) delusion
    d) filament
59. John was asked to *amend* the report.
    a) change
    b) write
    c) return
    d) copy
60. The equipment was carried on the canal in large _____.
    a) slippers
    b) husks
    c) braids
    d) barges
61. Bob was sent to prison because he tried to _____ paying his income taxes
    a) detach
    b) emit
    c) endow
    d) evade
62. The door swung slowly on its old _____.
    a) fringes
    b) braids
    c) clips
    d) hinges
63. Mr. Brock is a very *shrewd* businessman.
    a) successful
    b) clever
    c) dishonest
    d) honest
64. Let's go to the mill and watch the apples being pressed into _____.
    a) cinder
    b) cobbler
    c) candor
    d) cider
65. We found Bill *prostrate*.
    a) lying flat
    b) backing up
    c) standing up
    d) bending over

66. If you touch that wet ink, you can be sure it will _____.
    a) mingle
    b) smear
    c) infect
    d) maneuver
67. Why does Jack *shun* Betty?
    a) avoid
    b) fear.
    c) trick
    d) admire
68. I want the *crimson* one.
    a) round
    b) sweet
    c) flat
    d) red
69. John was in an accident last year and now _____ when he walks.
    a) lumps
    b) limps
    c) cripples
    d) crumbles
70. Mr. Jones' *offspring* were healthy.
    a) cattle
    b) plants
    c) parents
    d) children
71. His pants *sagged*.
    a) were pressed
    b) were clean
    c) were tight
    d) were loose
72. A small village is sometimes called a _____.
    a) mound
    b) hamlet
    c) pavilion
    d) tributary
73. Mr. Martin *detained* Ed at his store.
    a) employed
    b) hid
    c) delayed
    d) found

74. The *haughty* woman met him in New York.
    New York.
    b) rich
    c) fashionable
    d) fat
75. Everyone thinks our team will win the game; the _____ are 10 to 1 in our favor.
    a) odds
    b) tidings
    c) margins
    d) fractions
76. A fish breathes by means of its _____.
    a) flops
    b) gills
    c) lutes
    d) hunches
77. That is not an easy thing to *take on*.
    a) believe
    b) assume
    c) remove
    d) allow
78. Mr. Jones *prompted* my decision to leave.
    a) understood
    b) opposed
    c) influenced
    d) justified
79. We didn't want to *merge* them.
    a) increase
    b) divide
    c) stop
    d) join
80. The crowd was *scant*.
    a) quiet
    b) displeased
    c) small
    d) large

REFERENCES

Ard, J. 1982. The use of bilingual dictionaries by ESL students while writing. *I. T. L. Review of Applied Linguistics*. 58.1-26.

Ausubel, D. 1963. *The Psychology of Meaningful Verbal Learning*. New York. Grune and Stratton, Inc.

Drever, J. 1964. *A Dictionary of Psychology*. Harmondsworth. Penguin Books, Ltd.

Foucault, M. 1977. Nietzsche, genealogy, history. In *Language. Counter-memory. Practice*. Ithaca. Cornell University Press.

Gass, S. 1980. Variability in L2 experimental data. *Indian Journal of Applied Linguistics*. 6.1.60-74.

Kellerman, E. 1983. Now you see it, now you don't. *Language Transfer in Language Learning* ed. by S. Gass and L. Selinker. Rowley, MA: Newbury House.

Kleinmann, H. 1977. Avoidance behaviour in aduIt second Language acquisition. *Language Learning*. 27.1:93-107.

Landis, J. R., W. M. Standish, and G. C. Koch. 1976. A computer program for the generalized chi-square analysis of categorical data using weighted least squares to compute Wald statistics. GENCAT. *Biostatistics Technical Report* No. 8. Ann Arbor. Department of Biostatistics, University of Michigan.

Nietzsche, F. 1887. *Zur Genealogie der Moral*. Translated as *The Genealogy of Morals*. In *Basic Writings of Nietzsche*. New York. 1966.

Popov, K. G. 1978. Problemy semantizacii russkoj leksiki bolgarskoj auditorii. In *Problemy ucebnoj leksikografii i obucenija leksike*. Moskva. Izd. "Russkij Jazyk."

Postman, L. 1971. Transfer, interference and forgetting. *Woodworth's and Schlosberg's Experimental Psychology*. 3d ed. ed. by J. W. Kling and L. A. Riggs. New York. Holt, Rinehart, and Winston, Inc.

Roscoe, J. T. 1975. *Fundamental Research Statistics for the Behavioural Sciences*. New York. Holt, Rinehart, and Winston, Inc.

Schachter, J. 1974. An error in error analysis. *Language Learning*. 24.2:205-214.

Selinker, L. 1969. Language transfer *General Linguistics*. 9.67-92.

Transfer and Universals in Second Language Epenthesis[1]

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Introduction

Disenchantment with the strong form of the contrastive analysis hypothesis stemmed in part from the fact that simple comparison of the surface patterns of the native and target languages often proved inadequate to account for the nature and occurrence of learners' errors. However, developments in linguistic theory since the early days of contrastive analysis provide new approaches to the problem of identifying and predicting errors related to language transfer.

Two major aims of much recent research in linguistics have been first, to provide rigorous models of the competence of native speakers of a wide range of languages, and second, to separate out those aspects of grammar that are universal (and presumably innate) from those that are language-specific. The definition of the object of study as the native speaker's competence rather than simply the surface patterns of a language opens the possibility that many of the systematic but previously unexplainable errors of language learners may be understood as errors of transfer of first language rules and constraints. The particular effects of these rules may be different in the native and the target languages, since the target language may offer a different range of environments in which the rules can apply. But since explicitly stated grammatical rules make predictions beyond the data they are intended to account for, we can expect that in at least some cases the target language will provide opportunities to test the predictions of these rules by offering input strings of types not found in the native language. Where the errors of language learners conform to the predictions made by the rules of the native language, even in environments not found in the native language, we can conclude that these errors result from transfer of the native language rules. Similarly, where error patterns are not consistent with the rules of either the native or the target languages, we can look to the theory of linguistic universals to provide an account of these errors.

This chapter offers examples of errors of both types: error patterns directly attributable to transfer of native language rules to target language environments, including environment types not attested in the native language; and error patterns that cannot be motivated by anything specific to the grammar of either the native or the target languages, but instead are consistent with universal markedness

constraints. The errors considered involve epenthesis -- insertion of a vowel -- in English target language words by native speakers of Egyptian Arabic and Iraqi Arabic. I examine a linear account of vowel insertion in these dialects and show that it makes no predictions for the learner errors in environments that do not occur in the native language. I then compare two syllabically-based accounts of the native language data and argue that while both make predictions beyond the first language data, only one correctly predicts the range of epenthesis errors in the target language. The fact that this analysis correctly predicts learners' errors in a target language that provides a much wider range of epenthesis environments that are seen in the native language constitutes strong support both for this particular analysis and for the hypothesis that language transfer plays a significant role in the acquisition of a second language. The one class of epenthesis errors that are not consistent with the transfer of the native language epenthesis rules are shown to be just those cases that a theory of Universal Grammar singles out as exceptional, and I suggest that these error patterns result from learners' knowledge of universal markedness constraints. In support of this hypothesis, I show that the error patterns attested in these cases are paralleled by learners from a wide range of first language backgrounds.

Errors Involving Consonant Clusters

The problem I am concerned with is the pronunciation of English words beginning in consonant clusters by speakers of two dialects of Arabic. I have argued elsewhere (Broselow 1984) that errors involving consonant clusters generally occur when these clusters must be analyzed as belonging to syllable structures which are not permitted in the native language, and that the mispronunciation of the clusters represents an attempt by the language learner to bring second language forms into conformity with first language restrictions defining possible syllables. In English, for example, no syllable may begin with a nasal followed by a consonant. When clusters consisting of nasal plus consonant occur between vowels in foreign words, they do not create problems for English speakers, since the word may be analyzed as consisting of permissible syllables, for example, (u)(gan)(da) for *Uganda*. But when such a cluster is word-initial, there is no way to analyze the syllable containing it as a possible English syllable, and so the cluster is often modified. The wide variety of ways in which such clusters may be modified in English is illustrated in (1):

(1)		*English*	*Native*	
	a.	[ɛnkomo]	[ŋkomo]	'Nkomo'
	b.	[n̪krumə]	[ŋkruma]	'Nkrumah'

c.	[t_itsi]	[tsitsi]	'tsetse (fly)'
d.	[_nam]	[p^{h}nam]	'Phnom (Penh)'
e.	[swɛps]	[šwɛps]	'Schweppes'
f.	[šri]	[sri]	'Sri (Lanka)'
g.	[gotzbadɛ]	[γotbsadɛ]	'Ghotbzade'

In (1a) and (1b), the technique used to create a syllable structure which conforms to English restrictions is to insert a vowel, either before the cluster as in (1a) or inside the cluster as in (1b). Another possibility is to delete one of the consonants (the second in (1c), the first in (1d)), and still another is to change one of the consonants: in (1e), *š* is changed to *s* to avoid the proscribed sequence *šw*,[2] while in (1f), *s* is changed to *š* to transform the un-English sequence *sr* into the permitted *šr* (as in *shriek*). And finally, the order of the consonants may be changed, as it is in (1g); since no English syllable may end in *tb* or begin in *bz*, this cluster cannot be divided into permissible syllables, many speakers simply reverse the order of the consonants to create the permitted syllable-final cluster *tz*.[3]

It is not obvious how to predict which of these means of resolving the conflict between first and second language syllable structures will be employed by speakers of English. It would be interesting, then, if speakers of other languages consistently chose only one of these methods of transforming foreign language strings to fit native language patterns, and if different methods were associated with speakers of different native language backgrounds, since this would suggest that the choice of a method of resolving the conflict between first and second language syllable structures is influenced by factors in the native language. In this chapter I examine consistent patterns of errors in the speech of Arabic learners of English. I argue that speakers of different dialects of Arabic systematically employ different means of resolving the conflict between first and second language syllable structures, as a result of the transfer of the differences in native language rules.

Errors By Arabic Learners Of English

The errors I discuss here were made by native speakers of two dialects of Arabic, Iraqi Arabic (the dialect of Baghdad and environs) and Egyptian Arabic (the dialect of Cairo and lower Egypt in general). The errors were collected in various ways: (1) by recording errors I have heard in conversation with speakers of these dialects over the course of several years; (2) by asking linguists who were native speakers of these dialects to record errors made by their compatriots; (3) by asking teachers who had taught English to Egyptian and Iraqi students what sorts of errors their students had made consistently; (4) by searching the literature on second language learning for discussions of errors by speakers of these dialects and of the treatment of borrowed words (which seem to be treated in just the same way

as new vocabulary in the second language); and (5) by asking two speakers of each dialect to read a word list and read and answer questions on various passages.

These methods revealed interesting differences in the treatment of initial consonant clusters by members of the two dialect groups, and a surprising uniformity within dialect groups. The forms in (2) show typical errors made by Egyptians:[4]

(2) Errors by Egyptian speakers

a.	[filoor]	'floor'
b.	[bilastik]	'plastic'
c.	[θirii]	'three'
d.	[tiransilet]	'translate'
e.	[silayd]	'slide'
f.	[firɛd]	'Fred'

Speakers of this dialect tend to insert an [i] between the first and second consonants of an initial two-consonant cluster (except in one class of clusters, three-consonant clusters, below). Speakers of Iraqi Arabic, on the other hand, tend to make fewer errors involving initial two-consonant sequences, but when such errors do occur, they reveal a different pattern-insertion of *i* before the initial cluster, as in (3):

(3) Errors by Iraqi speakers

a.	[ifloor]	'floor'
b.	[ibleen]	'plane'
c.	[isnoo]	'snow'
d.	[iθrii]	'three'
e.	[istadi]	'study'
f.	[ifrɛd]	'Fred'

(These words were pronounced with a glottal stop before the *i* when they occurred utterance-initially, in accord with a general rule of Arabic phonology inserting glottal stop before a syllable-initial vowel).

The fact that Iraqi speakers have on the whole less difficulty in producing initial clusters than Egyptian speakers do may clearly be attributed to positive transfer: while Egyptian Arabic words may begin with only one consonant, Iraqi words may and often do begin with consonant clusters, as 4 illustrates; as (4) also shows, *i* may optionally be inserted before initial clusters, giving the alternate forms shown here:

(4) Iraqi initial clusters

a.	qmaaš ~ iqmaaš	'cloth'
b.	θneen ~ iθneen	'two'
c.	člaab ~ ičlaab	'dogs'

Thus the insertion of *i* before initial clusters by Iraqis appears to be a clear case of

transfer of a phonological rule from the first language to the second. The explanation of the Egyptian errors, however, is much less obvious. The mispronunciation of these forms by Egyptian speakers is to be expected, since their first language does not permit syllable-initial consonant clusters, and the insertion of a vowel between the two members of the cluster served to bring the English word into conformity with Egyptian syllable structure constraints. But the interesting question of why Egyptian speakers consistently choose this means of resolving the conflict rather than one of the other means available, such as insertion of a vowel *before* the cluster, remains to be answered. This cannot be accounted for by invoking a native language rule inserting vowels into initial clusters, since there is no reason to assume that native language forms contain initial clusters at all; thus there is no motivation for postulating a rule of initial epenthesis on the basis of the facts of the native language. And in fact, the one set of cases which might be used to motivate a rule inserting a vowel in the vicinity of initial clusters would actually lead one to expect that Egyptian speakers would treat initial clusters as Iraqi speakers do. These cases are the imperative forms, which are generally equivalent to the imperfect stem of the verb, minus the subject-marking prefix:

(5) Egyptian imperfects and imperatives

yikallim	'he speaks	yišiil	'he carries'
tikallim	'she speaks	tišiil	'she carries'
kallim	'speak!'	šiil	'carry!'

When the imperfect stem begins with two consonants, the imperative is preceded by *i*:[5]

(6) Egyptian imperfects and imperatives

yiktib	'he writes'
tiktib	'she writes'
iktib	'write!'

Thus the rule inserting *i* in imperative forms, if transferred to the second language, should give [ifloor], [iblastik] instead of the attested Egyptian pronunciations [filoor] and [bilastik]. These forms, then, clearly do not result from transfer of the rule affecting imperatives.

Thus, the Egyptian errors appear to pose a serious problem for the hypothesis that both the Egyptian errors and the Iraqi errors are a result of language transfer. However, a closer examination of the facts provides convincing evidence that the Egyptian errors, like the Iraqi ones, do in fact result from the transfer of a productive phonological rule of the native language.

Epenthesis In Three-Consonant Clusters

Both Iraqi Arabic and Egyptian Arabic have rules inserting a vowel into medial three-consonant clusters. As (7) shows, the rules of the two dialects differ in one respect: in Iraqi, the vowel is inserted after the first of three consonants, while in Egyptian, the vowel is inserted after the second of three consonants:

(7) a. Iraqi epenthesis

kitaba (kitab+a)	'he wrote it/him'
kitabta (kitab+t+a)	'I wrote it/him'
kitabla (kitab+l+a)	'he wrote to it/him'
kitab*i*tla (kitab+t+l+a)	'I wrote to it/him'

b. Egyptian epenthesis

katabu (katab+u)	'he wrote it/him'
katabtu (katab+t+u)	'I wrote it/him'
katab*i*lu (katab+l+u)	'he wrote to it/him'
katab*ti*lu (katab+t+l+u)	'I wrote to it/him'

These rules of epenthesis are quite general and productive, leading to the attested errors shown in (8):

(8) a. Iraqi error: chil*i*dren 'children'
b. Egyptian error: child*i*ren 'children'

The epenthesis rules, then, can be represented as in (9):

(9) a. Iraqi: $\emptyset \rightarrow$ i/C__CC
b. Egyptian: $\emptyset \rightarrow$ i/CC__C

As written here - the proper formulation in a linear, segmentally based generative framework -these rules make no predictions concerning the treatment of initial consonant clusters in these dialects. But an alternative view of the rules as rules referring specifically to syllable structure will predict just the error patterns discussed in the preceding section.

The analysis of epenthesis I present here depends on the notion that epenthesis is actually a rule bringing underlying forms into conformity with restrictions on possible surface syllable structures: when a form contains consonants which cannot be analyzed as grouping into sequences of acceptable syllables, epenthesis applies to create permitted syllables. An analysis of epenthesis in these two dialects as syllable-based was first offered in Broselow (1980), and a reanalysis was presented in Selkirk (1981); the analysis presented here incorporates most of the suggestions made by Selkirk. In this analysis, a string is first analyzed into permissible syllables. As (10) states, both dialects allow only syllables consisting of consonant-vowel or consonant-vowel-consonant, except at the beginning or end of an utterance; Iraqi optionally allows syllables

beginning in two consonants phrase-initially, while Egyptian allows syllables ending in two consonants phrase-finally:

(10) a. Iraqi syllables
CV
CVC
occasionally CCV(C) (only phrase-initially)

b. Egyptian syllables
CV
CVC
CVCC (only phrase-finally)

Thus if we divide the forms in (11), for example, into the syllable types shown in (10), we find that some consonants cannot be included in any of the permitted syllables without creating a violation of the restriction that syllables within an utterance begin and end with no more than one consonant:

(11) a. Iraqi
(ki) (tab) t (la)
(čil) d (ren)

b. Egyptian
(ka) (tab) t (lu)
(čil) d (ren)

To account for the position of the epenthetic vowel in these dialects, we need only assume that in Iraqi a vowel is inserted to the left of a "left-over" (nonsyllabified) consonant, creating a closed syllable, while in Egyptian a vowel is inserted to the right of the nonsyllabified consonant, creating an open syllable. These rules may be written as in (12):

(12) a. Iraqi epenthesis
C → iC, where C is not included in any syllable

b. Egyptian epenthesis
C → Ci, where C is not included in any syllable

The dashes in (13) show where this formulation of the rule predicts that vowels will appear in various words:

(13) a. Iraqi
(ki) (tab) (__t) (la)
(čil) (__d) (ren)

b. Egyptian
(ka) (tab) (t__) (lu)
(čil) (d__) (ren)

In fact, this is just where vowels do appear in these words.[6] This rule also predicts the position of vowels in clusters which arise from the juxtaposition of words:

(14) Egyptian

a.	bint	'girl'
b.	nabiiha	'intelligent'
c.	bint^{i} nabiiha	'an intelligent girl'

Thus, the analysis outlined above accounts for the similarities between the two types of epenthesis in Iraqi: epenthesis into three-consonant clusters and epenthesis affecting initial clusters when the option of creating a two-consonant cluster at the beginning of a phrase is not chosen.[7] The analysis also captures nicely the similarities between the Egyptain and the Iraqi epenthesis rules. These reasons would be sufficient to argue for adoption of the syllable-based analysis; it can therefore be seen as an additional and unexpected virtue of the analysis that it also makes just the right predictions concerning the appearance of epenthetic vowels in the pronunciation of words in the second language. The treatment of initial clusters in the speech of Egyptians follows automatically from the view of the first-language epenthesis rule as syllable-based; although no initial clusters arise in the first language, the statement of medial epenthesis given in 12 automatically predicts that if initial clusters arose they would be treated as they in fact are treated by Egyptian foreign-language learners:

(15) a. Iraqi (__f) (loor)
b. Egyptian (f__) (loor)

Note, however, that this account makes the wrong predictions for the Egyptian imperative forms discussed above (*ktib* → *iktib*). As it turns out, this is not surprising, given more detailed analysis of the sound patterns of these dialects. As argued in Broselow (1982, 1988) vowel insertion in imperative forms actually results from a different rule than the syllabically-based epenthesis which is our focus here. Rather than serving to integrate segments into syllables, the imperative rule serves instead to bring forms into conformity with the constraints on minimal word size. One of the facts of this (and many other) Arabic dialects is that all monosyllabic words of a major lexical category must contain at least three moras--that is, a long vowel must be followed by a single consonant and a short vowel followed by two consonants. Monosyllabic content words of the form CVC are not permitted. We see the same restriction, and the same rule, operating in Iraqi, where initial vowel insertion, which is normally optional, is obligatory in imperatives of the CCVC: *druus* ~ *idruus* "lessons" but *idrus* (**drus*) "study!"

The vowel insertion operating in the imperative forms is thus conditioned by constraints on prosodic structure rather than syllabic structure. The position of the inserted vowel in the Egyptian speakers' productions of English initial clusters results from their application in this case of the syllabically-conditioned rule, which places a vowel after a leftover consonant, rather than the prosodically-conditioned rule, which places a vowel to the left of the prosodic unit. This is just what we would expect, since forms like *floor* violate Egyptain constraints on possible syllables rather than constraints on minimal word size.

If the analysis of epenthesis as a syllable-based process is accepted, then, it allows us to see the differing treatment of second language clusters by speakers of these two Arabic dialects as a result of the transfer of first language rules. If epenthesis is a way of dealing with impermissible syllable structures which arise in the native language as a result of the concatenation of morphemes, it makes sense that the same process will be used to facilitate the pronunciation of second-language forms which are defined as impermissible by the native language syllable structure constraints. The transfer of the first language rules of syllabification is consistent with the claim of Broselow (1984) that lower-level phonetically oriented rules are most susceptible to transfer, as well as to the claim of Rubach (1984) that it is postlexical rules that tend to be transferred; we have seen in (14) that epenthesis applies across words as well as within them.

Furthermore, the second language facts allow us to choose between two different syllable-based analyses of epenthesis. The account above explains the difference in the position of the inserted vowels in Egyptian *childiren* and Iraqi *chilidren,* as well as in the analogous native language forms, as a result of specification of the position of the inserted vowel with respect to the leftover consonant. In contrast, Ito (1989) proposes to account for the differences between the dialects in terms of directionality of syllabification. On Ito's account, Egyptian Arabic gathers segments (or more precisely, moras) into syllables from the left edge of the word, moving rightward, while in Iraqi the direction of syllabification is from right to left. Thus in Egyptian the syllable *chil* is formed first, leaving d unsyllabified. This consonant cannot be syllabified with the following segments (*ren*) because of the constraint against two-consonant syllable onsets, so a vowel is inserted after it; Ito proposes that creation of a CV syllable is the universally preferred means of syllabifying a single consonant. In contrast, Iraqi syllabification proceeds from the right edge of the word. Thus in *children* the syllable *ren* is the first one formed, leaving both *l* and *d* available for syllabification. It is assumed that two leftover consonants are syllabified by placing a vowel between them. Thus the difference in directionality of the Egyptian and Iraqi syllabification processes ensures that in a medial three-consonant cluster, Egyptian will have a

single leftover consonant, while Iraqi will have two leftover consonants, and the difference in the position of the inserted vowel follows from the number of leftover consonants. However, this account makes just the wrong prediction for the initial clusters that occur in the second language; it predicts that a word like *floor* should be pronounced as *filoor* in both dialects, since forms like this involve only a single leftover consonant--which should by the universally preferred rule be syllabified by insertion of a vowel to its right.[8]

Epenthesis In Four-Consonant Clusters

Thus far we have considered clusters of no more than three consonants, but in fact the epenthesis rules of Egyptian and Iraqi Arabic must be expanded to handle clusters of four consonants as well. The position of an epenthetic vowel in four-consonant clusters is the same in both dialects; the vowel appears between the first two consonants and the last two:

(16) a. Iraqi

kitabt*i*lha (kitab+t+l+ha) 'I wrote to her'

b. Egyptian

katabt*i*lha (katab+t+l+ha) 'I wrote to her'

This can be handled quite simply if we assume that when two consonants are left unsyllabified after the string has been divided into permissible syllables, a vowel is inserted between the two consonants, creating a permitted CVC syllable:

(17) a. (ki) (tab) (t-l) (ha)

b. (ka) (tab) (t-l) (ha)

This positioning of the vowel serves to bring into conformity with syllable structure restrictions with the minimum possible adjustment. This more complete formulation of the rule of epenthesis, it should be noted, makes predictions concerning the treatment of initial clusters of *three* consonants in English forms. Words such as *street*, for example, should be analyzed as in (18), with *rit* forming the only possible syllable and *st* left unsyllabified:

(18) (s t) (rit)

Since the epenthesis rule inserts a vowel between two unsyllabified consonants, the expected pronunciation of this form for speakers of both dialects is [sitrit]. This is precisely the pronunciation found in the speech of Iraqi learners of English:

(19) Iraqi errors

a. [sitrit] 'street'

b. [siblaš] 'splash'

c. [sikwer] 'square'

But Egyptian speakers show a different pattern:

(20) a. [istirit] 'street'
b. [izbilaš] 'splash'
c. [izbilendid] 'splendid'

In these forms, a vowel is inserted both before the cluster and after the second consonant.[9] This appears to be a problem for the generalizing of epenthesis to three-consonant clusters, but in fact it is a consequence not of the fact that these clusters contain three consonants but rather of the fact that all three-consonant clusters in English begin in *s* followed by a stop consonant *p, t,* or *k*. And, as was mentioned earlier, there is one class of initial two-consonant clusters which do not conform to the usual Egyptian error pattern; English initial clusters consisting of *s* plus a stop are pronounced, as (21) illustrates, with epenthesis inserting a vowel *before* the initial cluster:

(21) Egyptian errors
a. [istadi] 'study'
b. [izbasyal] 'special'
c. [iski] 'ski'

These clusters contrast, then, with clusters of *s* followed by consonants other than stops, which follow the regular pattern, as (22) shows:

(22) Egyptian errors
a. [siwetar] 'sweater'
b. [silayd] 'slide'

Thus the exceptionality of the pronunciation of initial three-consonant clusters by Egyptians is another instance of the exceptionality of initial clusters consisting of *s* plus a stop consonant.

There is nothing in the grammar of either Arabic of English that would directly explain the learner's differential treatment of *s*-stop clusters vs. other clusters, and additional facts suggest that an explanation would be sought not in the specifics of either the native language or the target language grammars, but rather in universal aspects of language. These facts involve parallel epenthesis patterns among learners of different native language backgrounds. For example, Singh (1985) finds speakers of Hindi--a language both geographically and genetically distant from Egyptian Arabic--employing a pattern of vowel insertion in loanwords that is exactly parallel to that employed by Egyptian learners of English[10]:

(23) Hindi (Singh 1985)
a. [fIrut] 'fruit'
[pIlIz] 'please'
[sIlIp ∧ r] 'slipper'

b. [Iskul] 'school'
[IspEliŋ] 'spelling'

Precisely the same pattern is reported for speakers of Bengali (Mahato 1974) and Central Pahari (Sharma 1980; this language is spoken in Uttar Pradesh):

(24) Bengali
a. [gelash] 'glass'
[shelet] 'slate'
b. [istamp] 'stamp'
[ishkul] 'school'

Central Pahari
c. [kilip] 'clip'
[silet] 'slate'
d. [istu:l] 'stool'
[ispi:c] 'speech'

Furthermore, this pattern cuts across target languages as well as native languages; Samarajiwa and Abeysekera (1964) report the following simplifications of Sanskrit clusters by native speakers of Sinhalese, which permits no initial clusters:

(25)

	Sanskrit	Sinhalese	
a.	tyage	tiyage	'gift'
	sriyavə	siriyavə	'grace'
b.	stri	istiri	'woman'

These facts suggest that the exceptionality of the treatment of *s*-stop clusters by Egyptian learners should be explained by universal factors rather than by language-specific ones, and further confirmation of this view is provided by the exceptional behavior of these clusters in a wide range of first language grammars (see Ewen 1982 for a valuable overview of these facts).

Fortunately, linguistic theory does offer an explanation of why *s*-stop clusters should pattern differently than other initial clusters (those consisting of an obstruent followed by a sonorant). These clusters are actually exceptions to the universal principle of Sonority Sequencing (this term is due to Selkirk 1984, following Sievers 1881, Jespersen 1904, de Saussure 1916, and others), which states that segments within a syllable tend to be arranged according to their relative sonority, with the most sonorous element (the vowel) in the middle, and segments arranged in order of decreasing sonority as they approach the margins of the syllable. The relative sonority of the various classes of sounds is indicated in (26):

(26) The sonority hierarchy
stops - fricatives - nasals - liquids - glides - vowels
least sonorous most sonorous

The principle that segments which are closer to syllable margins will be less sonorous than segments which are closer to the nucleus of a syllable predicts, correctly, that there will be no initial clusters in English consisting, for example, of *l* followed by *s* (a liquid followed by a fricative) or *m* followed by *p* (a nasal followed by a stop). The only English clusters which violate this principle are the *s*-stop clusters, which contain a fricative preceding a stop. Thus, these clusters are exceptional in violating the sonority hierarchy. (Note that clusters of *s* plus *w*, a glide, or *l*, a liquid, do not violate the sonority hierarchy, and that those are treated like other two-consonant clusters by Egyptians, as in pronunciation [siwetar] for *sweater* and [silayd] for *slide*.)

In addition to being the only two-consonant clusters which may contain an obstruent as their second member, *s*-stop clusters are exceptional also in being the only initial clusters which may be followed by a third consonant:

(27)

a. *s*-stop consonant	b. other clusters
spr, spl, spy: spring, splash, spew	*blw
str: string	*sly
skr, ski, sky, skw: scream, sclerosis, skewer, square	*psm etc.

Thus we can describe the possible syllable-initial consonant clusters in English by means of the diagram in (28):

(28)

Position 1 consonant	Position 2
	sonorant (glide, liquid, nasal)
s + obstruent	

If, as suggested by Fudge (1969), Selkirk (1982), and Fujimura and Lovins (1982), we consider clusters of *s* plus obstruent to function at some level as a single constituent, we have an extremely simple description of the restrictions on clustering within English syllables. (Selkirk argues that these clusters pattern as single units in syllable-final position as well.) This assumption also allows us to maintain the universality of the sonority hierarchy; we can assume that constraints on sonority sequencing apply to independent consonants, but that *s*-obstruent clusters are permitted just because they have a structure different from the obstruent-sonorant clusters, which obey sonority sequencing constraints; the *s*-stop clusters form a single constituent in a way that consonants in other clusters do not.[11] Thus the analysis of the *s*-stop clusters containing consonants that are somehow more closely connected than the consonants in unit is motivated by the distribution of these clusters in English, as well as additional facts of their behavior in various first language grammars. In addition, this analysis suggests an explanation for the reluctance of many language learners to break these consonants

apart by inserting a vowel between them, as they do with the unmarked cluster types, and as the transfer hypothesis predicts at least the Egyptian speakers should do. Thus, the only case of vowel insertion by Egyptian and Iraqi learners of English which is not amenable to explanation in terms of transfer of native language rules turns out to involve just those sorts of environments which are defined as anomalous by independently motivated universal principles.[12]

Conclusions

I have argued that language transfer plays a significant role in second language acquisition: certain systematic errors can be directly attributed to language learners' transfer of native language phonological rules. The different epenthesis patterns of Egyptian and Iraqi learners provided a clear case where learners of different native language backgrounds exhibited different error patterns consistent with a difference in their native language rules. I have also argued that in some cases this transfer was not obvious from an examination of the surface patterns of the native and target languages, since the second language provided input forms that did not occur in the native language; however, a particular analysis of the first language facts did predict the correct second language error pattern. And finally, I noted one sort of error which did not follow from any facts of the native language, but which was in fact consistent with universal principles: the principle of the sonority hierarchy defines onset cluster of obstruent-sonorant as unmarked, and clusters of *s*-stop as marked. The error patterns of Egyptian, Hindi, Bengali, and Sinhalese learners were exactly congruent with this categorization of cluster types, since the unmarked clusters were treated in one way, while the marked clusters were treated in another. No doubt as our understanding of the competence of native speakers of various languages becomes more sophisticated, and as our knowledge of linguistic universals increases, we will be better able both to explain and to predict the errors made by learners of a second language.

NOTES

1. This chapter is a revision and extension of an earlier paper (Broselow 1983). Much of the work on which the revisions are based was supported by NSF grant BNS-8617876 to the author and Daniel Finer. I would like to thank Ali Al-Bayati, Mushira Eid, Daniel Finer, Mohammed Jiyad, John McCarthy, Abdel-Rachman Sayed, Ahmed Shabana, Elisabeth Selkirk, and the students and staff of the University of Texas Intensive English program for assistance in data collection and for valuable discussion.

2. This pronunciation is common in various areas of the Midwestern United States.

3. Voicing assimilation gives *ts* or *dz* here, either of which may end a syllable in English. Epenthesis is also sometimes used to nativize this form, giving *gotbizadE*.

4. Since Arabic has no *p* phoneme, this sound is often pronounced as *b* by Arabic speakers.

5. Automatic insertion of a glottal stop before a syllable-initial vowel will give the phonetic form *[?iktib]*.
6. Since vowel-initial syllables are prohibited at the phonetic level in these dialects, independently motivated rules will readjust the syllable structure after epenthesis in the Iraqi forms, giving (ki)(ta)(bit) and (ci)(lid)(ren).
7. Iraqi also has a rule inserting a vowel between two word-final consonants, which is, of course, simply a manifestation of the same phenomenon (see Broselow 1980, Selkirk 1981, and Broselow (to appear) for more detailed discussion).
8. See Broselow (to appear) for a more detailed argument against Ito's account, and an alternative analysis in which the difference in position of inserted vowel is accounted for by appeal to differences in the representation of onset consonants (which are argued to be directly dominated by the syllable node) and rime consonants (which are directly dominated by mora nodes.)
9. Lehn and Slager (1959) claim that forms like this are pronounced CiCCV, as the analysis outlined above would predict, but this pronunciation is unattested in my experience, and Egyptian speakers I have consulted find it "un-Egyptian".
10. Singh argues explicitly that the Hindi errors result from universal constraints on sonority sequences, and provides an interesting analysis of these facts assuming a model of the syllable in which syllables consist of binary-branching nodes marked either strong or weak. For arguments that Singh's analysis fails to predict the full range of attested facts, see Broselow (in preparation).
11. A complete account of the structure of these segments goes beyond the scope of this paper. See Ewen (1982) for an analysis within the framework of dependency grammar, and see Broselow (in preparation) for a detailed analysis of fricative-stop onsets as partial geminates sharing doubly-linked laryngeal features.
12. However, see Karimi (1987) for evidence that Persian learners place a vowel before any *s*-consonant cluster but between the consonants in any other cluster type; see Karimi as well for a detailed examination of the syllable and mora structure of Farsi to determine whether this pattern is attributable to transfer. See Tarone (1980) for another argument that universal principles of grammatical organization play a role in learners' syllable simplification errors, and see Broselow and Finer (1991) for additional evidence that sonority sequencing plays a role in second language acquisition.

REFERENCES

Broselow, E. 1980. Syllable structure in two Arabic dialects. *Studies in the Linguistic Sciences* 10.2:13-24.

Broselow, E. 1982. On predicting the interaction of stress and epenthesis. *Glossa* 16.115-132.

Broselow, E. 1983. Nonobvious transfer: on predicting epenthesis errors. *Language Transfer in Language Learning* ed. by S. Gass and L. Selinker. Rowley, MA: Newbury House. Reprinted in *Interlanguage Phonology* ed. by G. Ioup and S. Weinberger 1987. Cambridge, MA: Newbury House.

Broselow, E. 1984. An investigation of transfer in second language phonology. *International Review of Applied Linguistics* 22.253-269. Reprinted in *Interlanguage Phonology* ed. by G. Ioup and S. Weinberger 1987. Cambridge, MA: Newbury House. Also reprinted in *Interlanguage Studies* ed. by D. Nehls 1987. Heidelberg: Julius Groos Verlag.

Broselow, E. 1988. Prosodic phonology and the acquisition of a second language. *Linguistic Theory in Second Language Acquisition* ed. by S. Flynn and W. O'Neil. Dordrecht: Kluwer Academic Publishers.

Broselow, E. To appear. Parametric variation in dialect phonology. *Perspectives on Arabic Linguistics III* ed. by E. Broselow, J. J. McCarthy, and A. Rouchy. Amsterdam: John

Benjamins.
Broselow, E. In preparation. Universal Grammar and the sonority hierarchy. Ms., SUNY Stony Brook.
Broselow, E. and D. Finer. 1991. Parameter setting in second language phonology and syntax. *Second Language Research* 7.35-59.
Clements, G.N. 1988. The role of the sonority cycle in core syllabification. *Working Papers of the Cornell Phonetics Laboratory* 2.1-68.
de Saussure, F. 1915. *Cours de Linguistic Generale.* Paris: Payot.
Ewen, C. 1982. The internal structure of complex segments. *The Structure of Phonological Representations Part II* ed. by H. van der Hulst and N. Smith. Dordrecht: Foris Publications.
Fudge, E. 1969. Syllables. *Journal of Linguistics* 5.253-286.
Fujimura, O. and J. Lovins. 1982. *Syllables as Concatenative Phonetic Units.* Distributed by Indiana University Linguistics Club.
Ito, J. 1989. A prosodic theory of epenthesis. *Natural Language and Linguistic Theory* 7.217-260.
Jespersen, O. 1904. *Lehrbuch der Phonetik.* Leipzig.
Karimi, S. 1984. Farsi speakers and the initial consonant cluster in English. *Interlanguage Phonology* ed. by G. Ioup and S. Weinberger 1987. Cambridge, MA: Newbury House.
Lehn, W. and W. Slager. 1959. A contrastive study of Egyptian Arabic and American English: the segmental phonemes. *Language Learning* 9.25-33.
Mahato, P. 1974. *A Linguistic Study of English Loan-words in Rabindra Literature.* Calcutta: A.K.Das.
Rubach, J. 1984. Rule typology and phonological interference. *Theoretical Issues in Contrastive Phonology* ed. by S. Eliasson. Heidelberg: Julius Groos Verlag.
Samarajiwa, C. and R. M. Abeysekera. 1964. Some pronunciation difficulties of Sinhalese learners of English as a foreign language. *Language Learning* 14.45-50.
Selkirk, E. 1981. Epenthesis and degenerate syllables in Cairene Arabic. *Theoretical Issues in the Grammar of Semitic Languages* ed. by H. Borer and Y. Aoun. MIT Working Papers in Linguistics 3.209-232.
Selkirk, E. 1982. The syllable. *The Structure of Phonological Representations Part II* ed. by H. van der Hulst and N. Smith. Dordrecht: Foris Publications.
Selkirk, E. 1984. On the major class features and syllable theory. *Language Sound Structure* ed. by M Aronoff and R. Oehrle. Cambridge: MIT Press.
Sharma, D.D. 1980. A study of loan words in Central Pahari. Chandigarh: Publication Bureau, Punjab University.
Sievers, E. 1881. *Grundzuge der Phonetik.* Leipzig: Breitkopf and Hartel.
Singh, R. 1985. Prosodic adaptation in interphonology. *Lingua* 67.269-282.
Steriade, D. 1982. *Greek Prosodies and the Nature of Syllabification.* Unpublished doctoral dissertation, MIT.
Tarone, E. 1980. Some influences on the structure of interlanguage phonology. *IRAL* 18.139-152.
Tarone, E. 1984. The role of syllable in interlanguage phonology. *Theoretical Issues in Contrastive Phonology* ed. by S. Eliasson. Heidelberg: Julius Groos Verlag.

Language Transfer and the Acquisition of Pronouns[1]

Jeanette K. Gundel and Elaine E. Tarone

Several chapters in this volume appear to agree on two main points: (1) Second language acquisition is a creative process, whereby learners construct and test hypotheses in much the same way that we assume first language learners do; however, it is a process which differs from first language acquisition in that the nature of these hypotheses is determined partly by the languages that the learner already knows. (2) Despite the obviously important role of the first language in second language acquisition, the term `language transfer' is misleading because it implies a simple transfer of surface `patterns', thus obscuring the complex interaction between the first and second language systems and language universals. We agree with both these points. The purpose of our study is to provide further insight into the role of the first language (L1) in second language (L2) acquisition by investigating the acquisition of pronouns by second language learners.

It is by now generally agreed that some similarities between languages facilitate learning, while others do not. In order to understand why this should be the case, it is useful first of all to distinguish those properties which are shared not only by the languages in question but by all natural languages, i.e. to distinguish properties which are universal from those properties which are shared by the languages in question but are not universal. Assuming with Adjemian (1976) that a learner's language is a natural language, we propose the hypothesis in I.

I. L1-L2 Facilitation hypothesis (LLFH)

a. When all natural languages are alike with respect to some linguistic property, L1-L2 facilitation is guaranteed. Such properties do not have to be (re)learned.

b. When L1 and L2 are alike with respect to some linguistic property, but not all languages are alike with respect to that property, L1-L2 facilitation is not guaranteed.

Our study asks the following questions: (a) Are there any properties of pronouns which pose no problem for learners, i.e. where learners never make errors and, if so, to what extent can these be predicted by the LLFH? (b)

What kinds of pronoun errors do learners make and to what extent can these be attributed to influence from the first language? We will restrict our analysis here to so-called definite pronouns, such as the italicized positions in (1).

(1) Leah likes the squirrel; *she* can watch *it* through the window for hours.

Properties of Pronouns

In answering the questions in (a) and (b) above, it may be helpful to summarize the ways in which pronouns can differ across languages and what learners need to know in order to be able to use them as a native speaker would in a given target language.

First, it is probably safe to assume that all natural languages obey something like the condition in II.

II. Pragmatic Condition on Pronouns (Gundel 1978a, 1978b, Gundel et al. 1989)

> The use of a pronoun will be felicitous only if its referent is activated, i.e. if a speaker can justifiably assume that the addressee is currently aware of the referent.

Unlike most language universals which have been discussed in the literature, this constraint is pragmatic, rather than purely structural, in that it involves the appropriate use of a particular form relative to the cognitive status of its referent. (See Gundel, Hedberg and Zacharski 1989 for more detailed discussion of such constraints). Like other pragmatic conditions, violation of the condition in II does not result in ungrammaticality. If the condition is not met, the result is simply infelicitous, because the addressee is unable to identify the referent of the pronoun, as in (2).

(2) A. Did he get back?
B. Who?

Second, it appears that all languages have a structural condition which blocks coreference between a pronoun and a following full noun phrase (NP) in a sentence like (3) (where identical subscripts indicate coreference):

(3) *He$_i$ said Eric$_i$ would be back in an hour.

Compare this with (4) and (5), where *Eric* and *he* can refer to the same individual.

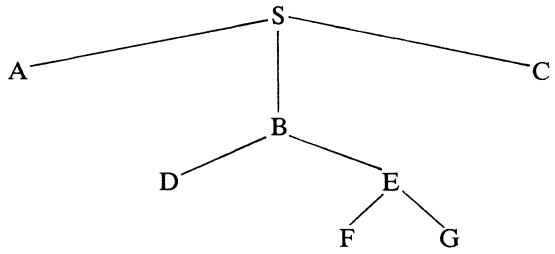
(4) Eric$_i$ said he$_i$ would be back in an hour.

(5) If he$_i$ finishes the paper, Eric$_i$ will be back in an hour.

A number of formal constraints on pronouns have been proposed in order to account for such facts. We include here one of the more general proposals put forward in Rinehart (1976).

III. Structural Condition on Coreference (Rinehart 1976)

> Two NPs cannot be coreferential if one is in the syntactic domain of the other and is not a pronoun. The syntactic domain of some node A consists of A and all and only the nodes dominated by the first branching node above A.



The NP *Eric* in (4) corresponds to A on the diagram in (6) and the position occupied by *he* corresponds to F on that diagram. Since the first branching node above A also dominates F, the two can only be coreferential if F is a pronoun. Thus, in (4) the position occupied by *he* not only **can** be a pronoun in order to be coreferential with *Eric,* it must be. Since the subject of the embedded clause in (3) is not a pronoun, it cannot be coreferential with the subject of the main sentence. In (5) on the other hand, *Eric* is not in the syntactic domain of *he* , since the first branching node above *he* is the embedded sentence. So the subject of the main clause (i.e. the position occupied by the NP *Eric*) does not have to be a pronoun in order to be interpreted as coreferential with the subject of the *if*-clause (i.e. the pronoun *he*). Although it is not entirely clear whether all languages allow a pronoun to be coreferential with a following non-pronominal NP, as far as we know all languages must obey at least the condition in III.

In addition to the two universal properties of pronouns stated in II and III, there are a number of ways in which pronouns can differ across languages. These are enumerated below.

> A. Languages differ as to whether or not they require an overt pronoun or a zero, i.e. empty, NP in certain environments. For example, English requires an overt pronoun in a sentence like (7), though zero in such an environment would be perfectly acceptable in Japanese, for example.

(7) The boy made a sandwich and put {it, *ø} in the bag.

On the other hand, English requires zero in a relative clause, as in (8), whereas Arabic, for example, requires a pronoun in this environment.

(8) The squirrel that Leah was watching {*it, ø} comes here every day.

B. Languages differ in the kind of information that is encoded in the pronoun. For example, English encodes gender in the third person singular, but not in the other forms. In Chinese, on the other hand, gender distinctions are not encoded in pronouns at all. All languages distinguish at least first, second and third person. Many languages distinguish more than that. In some languages, pronouns encode information about the social relation between speaker and addressee, or between speaker and person being talked about.

C. The position of a pronoun relative to the verb in the sentence differs across languages. In English, a pronoun occupies the same position as the corresponding noun.

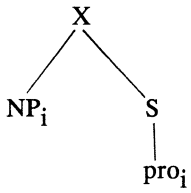
For example, subject pronouns immediately precede the verb in a declarative sentence and object pronouns follow the verb. In French, however, object pronouns obligatorily precede the verb, while non-pronominal objects follow the verb.

In this study we will be concerned primarily with the distribution of overt pronoun versus zero in interlanguage.

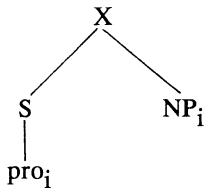
A-Environment VS. B-Environment

In order to make generalizations about the distribution of overt pronoun vs. zero across languages, it is useful to distinguish between two types of syntactic environment in which pronouns can occur. A pronoun is in an A-environment if its antecedent (i.e. the noun phrase with which it is coreferential) is a syntactic topic, where a syntactic topic is defined as a noun phrase adjoined to the left or right of a sentence in surface structure, as in (9a) and (9b).

(9a)



(9b)



Examples of overt and zero pronouns in A environments are given in (10)-(13).

(10) The sandwich which the boy put {*it, ø} in the bag was wrapped in foil.

(11) The sandwich, John put {it, ø} in a paper bag.

(12) The boy, {he, ø} made a sandwich and {he, ø} put it in a paper bag.

(13) Alex made {it, ø} and Harry ate {it, ø}, the sandwich.

As these examples show, English allows, and in some cases requires, zero pronouns in all A environments where the coreferential syntactic topic is to the left of the sentence. If the syntactic topic is on the right, as in (11) and (13), the situation is more complex. A full explication of this is beyond the scope of this paper.

A pronoun is in a B environment if its antecedent is not a syntactic topic, as in the examples in (14)-(17).

(14) The girl made a model airplane and threw {it, *ø} across the room.

(15) John made the sandwich and Harry put {it, *ø} in the bag.

(16) Q. What happened to the sandwich?
A. John put {it, *ø} in the bag.

(17) Ann couldn't come to the meeting because {she, *ø} had a class that day.

As these examples show, English requires overt pronouns in all B environments. Table 1 shows the distribution of zero vs. overt pronouns in B environments in the languages that relevant for our study: English, French, Spanish and Mandarin Chinese.

Table 1. Distribution of Zero vs. Overt Pronoun in B Environments

English	Chinese	French	Spanish
Subject			
Pronoun oblig	Pronoun not oblig.	Pronoun oblig.	Pronoun not oblig.
{he, *φ} saw Mary	{ta, φ} kan daw Mali	{il, *φ} a vu Marie	{él, φ)} vió a Maria
Object			
Pronoun oblig.	Pronoun not oblig.	Pronoun oblig.	Pronoun oblig.
Mary saw {him, *φ}	Mali kan daw {ta, φ}	Jean {l', *φ} a vu	Juan {lo, *φ} vió
Object of Preposition			
Pronoun oblig.	Pronoun oblig.	Pronoun oblig.	Pronoun oblig.
M sat on {it, *φ}	M dui {ta, *φ} shuohua	J est asseyé sur {elle, *φ}	J está sentado en {ella, *φ}

The Study

The data for our study were gathered from four sources: tape recorded conversations, recorded picture descriptions, a written gramaticality judgement task and a coreference judgment task. (The paper and pencil tasks appear in the appendices.) We were not able to rely solely on recorded conversations, since zero and overt pronouns do not occur with sufficient frequency in free conversations in all the contexts we were interested in and because analysis of pronouns in free conversation would just tell us what is possible, but not what is impossible or ungrammatical.

We must assume that under these different conditions (free conversation, tape-recorded descriptions of pictures, written grammaticality judgments, and coreference judgments) subjects may style-shift along their interlanguage continua (cf. Tarone 1979, 1988). We have therefore kept the data from the four sources separate in our analysis.

There are five adult subjects for whom we have all four types of data: two Chinese speakers (C1 and C2) and three Spanish speakers (S1, S2 and S3). All five had placed into the same level class on the basis of scores on the Michigan Proficiency Test, and all five had been in the United States for 4 to 6 months only. All except for S2 had studied English before coming to the United States.

In addition, we have been granted access to OISE's data from English-speaking children in the French immersion program in Toronto; for these children, we have conversation and picture description data, but no data from written tasks. For six children, we have both grade 1 and grade 2 data, gathered

after 2 and 3 years (respectively) of exposure to the target language, French. In this chapter, we discuss these six learners' grade 1 data only. The longitudinal development of the pronominal systems of these children's interlanguages is discussed in detail in Gundel, Stenson and Tarone 1984.

Picture descriptions from three Spanish speakers and four Chinese speakers, which were gathered in 1977 for another study (Tarone 1978), have provided us with additional information that may provide some insights and suggestions for future research.

The data from our original five subjects (English L2) was analyzed as follows: The results of the written test were examined to determine whether there was any pattern in the subjects' judgments and, if so, what that pattern was. All tape recordings of conversations and picture descriptions were transcribed; sentences containing obligatory contexts for pronouns in English were then extracted and listed separately. Each pronoun was classified according to whether it was in an A environment or a B environment; whether it was subject, object or object of a preposition; whether it contained a zero or overt pronoun; and whether or not it was correct in English. Below we list examples of each category of sentence we found.

B environment :

18. I came to United States
(subject pronoun)

19. But now is fine
*(subject zero)

20. I have them, yes
(subject pronoun); (object pronoun)

21. But he didn't take
(subject pronoun), *(object zero)

A environment

22. That boy, he's smart
(subject pronoun)

23. John came and he went
(subject pronoun)

24. So he taking the ball and throw
(subject zero); *(object zero)

25. Is very new, the study
*(subject zero)

26. The man hurry away to catch it, this
(object pronoun)

27. She arrive to the place where she prefer
(object zero)

The results of the analysis of conversational and picture description data are displayed in Table 2.

For the French L2 data, the picture descriptions and conversations had already been recorded and transcribed by native speakers of French. Zero and overt pronouns from this data were classified in the same way as those from the English L2 data described above. Results from the grade 1 data are displayed in Table 3.

Results And Discussion

As noted above, the purpose of our study was (a) to test the hypothesis in I, and (b) to determine the extent to which errors for zero and overt pronouns could be attributed to influence from the first language. The L1-L2 facilitation hypothesis predicts that learners will not make errors which violate universal properties of language such as the pragmatic and structural conditions on pronouns stated in II and III above. This prediction was upheld by our data. We found no occurrence of a pronoun used infelicitously in violation of the pragmatic condition on pronouns in II; these learners seemed to know, as native speakers know, that a (zero or overt) pronoun should not be used unless the speaker has reason to believe that the addressee's attention is focused on the referent. The data was also consistent with the structural condition on coreference in II. These learners never considered a pronoun to be coreferential with a full NP in its syntactic domain, although all of the subjects accepted coreference between a pronoun and a following full NP when this did not violate the condition in III. It remains to be seen whether , in free conversation, these learners follow the same pattern that they do on this written task. Such information is extremely difficult to obtain, given the low frequency of 'backwards anaphora' in normal conversation.

Table 2 Pronouns in Subject, Object, and Object-of-Preposition Position (English L2, Spanish L1 and Chinese L1)

		Subject		Object		Obj of Prep	
Subject	Task	Pro	ø	Pro	ø	Pro	ø
B environment							
S1	Conv.	68	6*	7	2*	2	0
	Pict.	22	6*	0	1*	3	0
S2	Conv.	22	1,11*	0	0	3	0
	Pict.	21	13*	0	3*	1	1
S3	Conv.	35	1*	0	0	3	0
	Pict.	16	6*	0	2*	0	1
C1	Conv.	32	3*	4	1*	1	0
	Pict.	11	5*	8	0	1	0
C2	Conv.	24	0	2	0	2	0
	Pict.	22	1*	5	1*	0	0
A environment							
S1	Conv.	3	2,2*	0	0	0	0
	Pict.	7	3	0	1	0	0
S2	Conv.	3	1	0	0	0	0
	Pict.	2	6	0	0	0	0
S3	Conv.	0	0	0	0	0	0
	Pict.	2	6,1*	0	0	0	0
C1	Conv.	0	2	0	0	0	0
	Pict.	0	2	2	0	0	0
C2	Conv.	0	1	0	0	0	0
	Pict.	1	4	0	0	0	0

*signifies ungrammaticality.

The two instances of zero in object of preposition position in B environments were both cases of "put on" , as in "...put, butter on, on..." The "prepositions" in these cases seem to us to be rather adverbial in nature. In any case, these sentences are grammatical for some speakers of English and thus are not starred.

Table 3 Pronouns in Subject, Object, and Object-of-Preposition position (French L2, English L1 -- French Immersion, Grade One)

		Subject		Object		Obj of Prep	
Subject	Task	Pro	ø	Pro	ø	Pro	ø
B environment							
N.	Conv.	49	0	1	1*	1	0
	Pict.	22	1*	2	5*	0	0
D.	Conv.	27	0	0	0	0	0
	Pict.	32	0	0	4*	0	0
J.	Conv.	12	0	0	0	0	0
	Pict.	26	1*	2	4*	0	0
W.	Conv.	31	0	0	2*	1	0
	Pict.	6	0	0	2*	0	0
B.	Conv.	10	0	0	1*	0	0
	Pict.	22	0	5	2*	0	0
T.	Conv.	45	0	4	4*	0	0
	Pict.	25	0	3	4*	1	0
A environment							
N.	Conv.	1	0	0	0	0	1*
	Pict.	1	2,1*	0	0	0	0
D.	Conv.	1	0	0	0	0	0
	Pict.	4	6	0	0	0	0
J.	Conv.	0	0	0	0	0	0
	Pict.	10	1,2*	0	0	0	0
W.	Conv.	3	3*	0	1	0	0
	Pict.	8	5*	0	0	0	0
B.	Conv.	0	0	0	0	0	0
	Pict.	11	1*	0	0	0	0
T.	Conv.	5	1,4*	0	0	0	0
	Pict.	7	1,1*	0	0	0	0

*signifies ungrammaticality

Tables 2 and 3 show the distribution of pronoun and zero in the conversational and picture description data for English L2 and French L2 speakers, respectively. Since we did not obtain a sufficient number of obligatory contexts for A environments, we will restrict the remainder of our discussion to the B environments.

In Table 2, the first column under each grammatical function (subject, object, object of preposition) indicates the number of overt pronouns produced in that context; the second column indicates the number of zero pro-

nouns in that context. Thus, for example, in conversation, S1, (S indicates Spanish speaker and C indicates Chinese) produced 6 zero and 68 overt pronouns in B environment subject position. Since English does not allow zero in B environments, the zero pronouns are all ungrammatical as indicated by the asterisk. Table 2 shows that both Spanish and Chinese speakers produced a number of errors in B environment subject context (though it may be worth noting that the number of such errors relative to the number of correct overt pronouns is relatively low). Since both Spanish and Chinese allow zero in subject position (see Table 1) these errors could be attributed to influence from the native language. Notice that the English speakers learning French (Table 3) made virtually no errors by producing zero subjects. Since both English and French require overt subject pronouns in B environments, these results are consistent with the LLFH in I; that is, L1-L2 facilitation seems to have occurred in the case of English speakers learning French, where L1 and L2 are alike in requiring overt subjects, but not in the case of Chinese and Spanish speakers learning English, where L1 and L2 differ with respect to whether or not they require overt subjects. It should be pointed out, however, that while these results are consistent with the LLFH, they do not follow from it, since facilitation is not guaranteed when the property in question is not universal. Thus, our hypothesis is consistent with the fact that English speakers learning French also omitted subject pronouns twice in B environments, in spite of the fact that English requires overt pronouns in subject position.

Similar observations may be made for objects of prepositions in B environments, where virtually no errors were made by any of the subjects. This again is consistent with the LLFH since none of the languages in question allow zero in this position.

If we turn now to direct objects in B environments, the situation becomes more complicated. Since Chinese does not require overt pronouns in object position, the errors made by Chinese speakers could be attributed to influence from the first language (see Table 1). However, no such explanation is possible for the Spanish speakers, since Spanish requires overt pronouns in object position. What is particularly surprising is that Spanish speakers actually made more errors involving zero objects than the Chinese speakers did. In fact, two of the three Spanish speakers used only zero in object context. In Table 3 , we see that English speakers learning French also made many errors involving zero objects, even though English, like French, requires overt pronouns in object position.

How can we explain the use of zero in object position by the English speakers in French and by the Spanish speakers in English? First of all, we should point out that these results are consistent with he LLFH in I. Since the requirement of overt pronouns in object position is not universal, L1-L2 facilitation is not guaranteed here. At least two possible explanations suggest

themselves for why facilitation did not occur in this case. One possibility is that the error is developmental. That is, it may be the case that there is a developmental stage in language acquisition in which all learners omit pronouns, even in those contexts where an overt form is required in the target language. A second possible explanation, and one that is not necessarily mutually exclusive with the first, is that these errors result from first language influence that is of a more complex sort than has usually been considered under the label 'transfer'. If transfer is considered to be transfer of a pattern from L1 to L2, then it cannot explain these facts, since the SVø (or SøV) pattern does not exist in Spanish or English. However, if we view second language acquisition as a process of hypothesis testing that is influenced by the L1 (see, e.g. Schachter this volume), then perhaps these data can be explained, at least partly, in terms of L1 influence. Even though English, French and Spanish all require overt pronouns in B-environment object position, they require them in different positions relative to the verb. English pronouns occur in the same position as a full NP object, i.e. after the verb. In Spanish and French, however, object clitics occur before the verb. We can thus view the acquisition of Spanish and English object pronouns as proceeding in the following stages. At first, learners hypothesize that object pronouns in the L2 will occur in the same position as in the L1 - that is, S-pro-V in the case of Spanish speakers learning English, and S-V-pro in the case of English speakers learning French. Since the L2 input is not consistent with this hypothesis in either case, the learners abandon this first hypothesis. They construct a second hypothesis, namely that the L2 does not require overt object pronouns at all. Since this too turns out to be inconsistent with the L2 input, the third and final hypothesis is that the L2 does require overt object pronouns, but that their order relative to the V is different from that in the L1.

We do have some evidence which supports this proposed explanation. First, there were no errors at all for these learners in object-of-preposition contexts, where all the languages concerned require an overt form. Second, in the data of the English speakers learning French, we have evidence for all three stages hypothesized above:

I:	S-V-pro	il ne pas prend le
II.	S-V-O	je n'ai pas voir
III.	S-pro-V	mais je l'aime

The proposed sequence of stages was further supported by a longitudinal study of English learners in the French immersion program (Gundel, Stenson and Tarone 1984). The next step might be to determine whether the same sorts of errors occur where L1 and L2 not only require overt object pronouns, but require them in the same position relative to the verb, as with English learners of German or vice-versa.

This study is, to our knowledge, the first to explicitly examine the occurrence of zero and overt pronouns in the interlanguage of second language learners. Since this paper was originally published, there has been considerable research on the acquisition of pronouns in a second language, most notably work on the so-called "pro-drop parameter" (e.g. White 1985 and Flynn 1987). Work in this vein differs from the research reported in this paper in that it has focused almost exclusively on the acquisition of subject pronouns and can therefore not account for cases of "object drop", such as those reported here. Moreover, our finding that even learners whose L1 requires subject pronouns may occasionally omit them in obligatory contexts in L2 has not been reported in work on the "pro-drop parameter"; these data would seem to suggest that there are aspects of the acquisition of subject pronouns which cannot be explained solely in terms of the "pro-drop parameter".

In this chapter, then, we have proposed an L1-L2 facilitation hypothesis and have shown, in support of this hypothesis, that second language learners do not violate pragmatic and structural conditions on pronouns which hold for all human languages.

We have proposed that the range of interlanguage phenomena that can be explained as resulting from influence of L1 on L2 can be broadened if we view second language acquisition as a process of hypothesis testing, as suggested by Schachter (this volume) and others.

Finally, we have suggested a sequence of acquisition of pronouns in object position for Spanish speakers learning English and English speakers learning French, where L1 and L2 are alike in that they both require overt objects, but differ in the order of pronominal objects relative to the verb.

While more empirical and theoretical work is needed in this area , we feel that we have made an important first step in investigating the acquisition of pronouns by second language learners, and have thereby provided further insight into the role of the first language in second language acquisition.

NOTES

1. We would like to acknowledge Yao Zhu an Haui-chuan Huang for their help with the Chinese language data in this chapter.

REFERENCES

Adjemian, C. 1976. On the nature of interlanguage systems, *Language Learning*. 26.297-320.

Flynn, S. 1987. *A parameter-setting model of L2 acquisition: Experimental studies in anaphora*. Dordrecht. Reidel.

Gundel, J.K. 1978a. Stress, pronominalization and the given-new distinction. *University of Hawaii Working Papers in Linguistics*. 10.2.1-13.

Gundel, J.K. 1978b. A universal constraint on deletion. *Proceedings of the Twelfth International Congress of Linguistics.* ed. by W. Dressler and W. Meid. *Innsbrucker Beitrage zur Sprachwissenschaft.* 532-536.

Gundel, J.K., N. Hedberg and R. Zacharski. 1989. Givenness, implicature and demonstrative expressions in English discourse. *Papers from the 25th Annual Meeting of the Chicago Linguistic Society. Part II: Parasession on Language in Context.* ed. by B. Music, R. Graczyk and C. Wiltshire. Chicago Linguistic Society, pp. 89-103.

Gundel, J.K., N. Stenson and E. Tarone. 1984. Acquiring pronouns in a second language. *Studies in Second Language Acquisition* 6.2:215-225.

Rinehart, T. 1976. *The syntactic domain of anaphora.* Unpublished Ph.D. dissertation, Massachusetts Institute of Technology.

Tarone, E. 1978. Conscious communication strategies in interlanguage: a progress report. *On TESOL '77: Teaching and Learning ESL.* ed. by H.D. Brown, C. Yorio, and R. Crymes. Washington, D.C.: TESOL.

Tarone, E. 1979. Interlanguage as chameleon. *Language Learning.* 29.2:181-191.

Tarone, E. 1988. *Variation in Interlanguage.* London: Edward Arnold Publishers.

White, L. 1985. The pro-drop parameter in adult second language acquisition. *Language Learning* 35:47-62.

Rhetorical Transfer In Apachean English

Guillermo Bartelt

This chapter revisits a study on rhetorical constraints which appeared in the original transfer volume (Bartelt 1983). In attempting to explain the peculiarly redundant nature of English writing produced by Apachean speakers in Arizona, a claim was made that an oral L1 discourse feature is transferred to written English. The feature in question is the repetition of key lexical items and phrases for the expression of emphasis. The intent was to pursue Kaplan's (1966) suggestion that L1 "thought patterns" in rhetoric may play a crucial transfer role in L2 discourse production. In this chapter, additional work pertinent to rhetorical transfer is reviewed in an attempt to shed more light on this basically sound notion. In particular, insights from processing and nativization are explored to place the original study in Bartelt (1983) in a broader perspective.

Though Mandler (1978) and Carrell (1984) have suggested that the simple formal narrative schema might be universal, countless culture specific schemata surely embellish this basic discourse structure. A culture specific example is the Apachean oral rhetorical feature referred to in Bartelt (1983) as "redundancy." This feature is utilized for emphasis especially in persuasion, and it is also appropriate for the underscoring of emotions such as grief in eulogies, for repeating main ideas of stories and punchlines of jokes. The original study provided L1 data demonstrating such redundancy in a Western Apache text, which is repeated here for expository convenience:

(1) go ... 1944 ... go ... ai bitaa'hí bimaahí ... go ... go ... ai shi'aa bitaa'hí ... go ... na'iziid Miami yó ... go ... ákohgo shilnanéégo for dakuisą́ą́ 25 years ... go ... adą́ą́ tu mans ago ai shi'aahi ákú dageyú naghaagho ai ndeehí ndeehí ... go ... sidaahi ... go ... na'iziid tribal office yó na'ziidhí go ... go ...ai shi'aahí ai shi'aahí ákú visit aile 'o ... go ... a shilnį́į́ adą́ą́ shiihį́į́ ... go gona'iziidgo copper mine yó ... shi'áá dénchǫ́ biłdashníí ... go ... adą́ą́ ai shi'ááhí denchǫ'ǫ dobéghonsida hant'oa ... go ... aindeehí ... go ... ndeehí ... go ... dííndeehí ... go

... na'iziid ... go... tribal office yó aihíí díí shi'ááhí ... go ... nak'ai ... go ... Globe yó na'aashǫ t'éí barhíí tavernhíí ákúne ... go ... sik'een ... go ... go ... bich'į'yidáhzhti' last thursday dą ákú nasháán ... go ... bich'į'yidáhzhti'

And in 1944 her father and her mother and my wife's father, he works in Miami. And she has been married to me for 25 years. And two months ago she was up there with this other man; the man works at the tribal office; that's where he works. And my wife, and my wife, and she visits with him; she tells me. And me I work here over at the copper mine. And I tell them my wife is no good. And my wife is no good. I don't understand. I don't know why. And this man, and this man, and this man, he works over at the tribal office. And my wife and these two go to Globe, and they visit the bar and tavern. And they were sitting in there, and I talked to them last Thursday when in there. And I talked to them.

(Bartelt, 1983, p. 299)

While in the English translation the italicized segments would contribute to a redundant quality of the text, in the Apachean counterpart they are perceived as an appropriate expression of emphasis. No mention of this Apachean stylistic device can be found in either the linguistic or ethnological literature. However, experts on and native speakers of Western Apache and the closely related Navajo language agree on its existence. (Keith Basso, Ken Hale, Irvy Goosen, David Harvey, personal communication)

Scollon and Scollon (1979) observe a similar discourse characteristic in the mode of argumentation in Canadian Athapaskan, which is linguistically related to Apachean. They claim that the emphasis of the discourse lies in the process rather than the outcome. From an outsider's point of view, discussions seem to lack logic and proceed in circular and holistic ways. Particularly in public meetings, the Scollons note that portions of texts are repeated with only subtle changes in detail. Apparently, these changes only become important when the discussions require the presupposition of new underlying assumptions for the grounding of the arguments. Scollon and Scollon (1979) note:

> The method of argument was for one to say first something like, "We have a good chief." The second would then agree saying, "I agree that we have a good chief but there are other good people." Thus it was only implied that this chief might be replaceable. The first would then say, "I agree that there are other good people but they don't know how to speak for the people." This would be answered by "People should tell their chief what they think, then he can speak for them." (p. 186)

The Scollons claim that the main concern of the speakers is the avoidance of a rapid integration of new details and the sudden shift of presuppositions in order to ensure a fully assimilated discourse in progress. To an outsider, on the other hand, the discourse appears simply disorganized because the speakers do not seem to stick to the point.

The following written texts produced by Apachean speakers are additional examples of the kind of discourse preferences discussed in Bartelt (1983):

(2) The music are the most exciting music in the movies that go with the movies. The rock music go with the acting in the music in Car Wash. While the people washing the car the music playing. The music really go with the acting in the movies.

(3) The worst that could happen to a person is to have a family. It is the worst problem a man or a woman could have, on the other hand an unprepared person will have a hard time supporting a family. The worst problem a man could have is to have a family. There will be no more freedom to go anywhere.

In both texts, the heavy reliance on repeating key lexical items such as music, movies, acting, worst (problem), is a feature that would probably not be tolerated by many English composition teachers. In fact, the original study utilized the native judgements of non-ESL teachers to define, operationally, redundancy as three or more repetitions of key lexical items in any given 100 word passage. Coupled with the L1 text, a strong case for the possibility of rhetorical transfer was made.

The preference for L1 rhetorical patterns in L2 discourse might be considered as a type of transfer in production. This concept refers to an L1 procedural constraint in an L2 production system, which Anderson (1976, 1980) claims exists as an ordered configuration of processes containing a condition and an action. In this view, a production system is based, in part, on the distinction between declarative and procedural knowledge as well as the presence of a working

memory (accessible information), declarative memory (cognitive units or chunks), and production memory (interpretation of declarative knowledge and procedural learning). In this conceptualization, learning consists of a gradual transformation of declarative knowledge of rules and data into automatically performed language tasks. Dechert (1984) suggests that proceduralized L1 knowledge is often needed in immediate performance, since an L2 is probably handled primarily declaratively. Consequently, Mohle and Raupach (1988) postulate the emergence of procedural transfer especially in high-demand task situations when, for instance, automatized syntactic frames are transferred from the L1 but filled with L2 declarative non-automatized knowledge.

Procedural transfer, as suggested by Raupach (1987), is probably not restricted to the syntactic level but may apply to the schematic level as well. However, Kaplan (1987:11) has warned that it is not clear whether prefabricated sets of syntactic structures behave the same way as reticulated sets of ideas. Yet, it seems purely heuristic to assume such an autonomy of content schemata if, in fact, there is one and only one information processing system. The findings in Carrell (1983, 1987), Rummelhart (1980) and Anderson and Pearson (1988) indicate that in the interaction between content and formal schemata, not only background information but also organizational structures are necessary to construct textual meanings. Therefore, it seems reasonable to expect the existence of formal rhetorical schemata, such as Apachean redundancy, which might be transferred procedurally from L1 to L2, producing non-native discourse patterns (Carrell & Eisterhold 1983, Carrell 1984).

In a number of papers, Kaplan (1966, 1972, 1987) argues that L1 formal schemata, such as rhetorical patterns, transfer to English L2 written discourse. Specifically, Kaplan (1987) postulates the existence of separate discourse grammars operating at the written and oral levels. As a result, pressures from oral constraints produce quasi-literate written varieties as exemplified by personal letters and the writing of linguistic minority groups, Kaplan claims. In these cases, orally based formal schemata seem to be transferred to written texts.

Ostler (1987:171) argues that the impact of oral preferences on writing has not been uncommon in the history of English. In fact, before written rhetorical styles had gained ground, oral formulaic expressions were acceptable in documents. However, when English developed a tradition of literacy, syntax evolved from one of repetitive parallels and rhythmic balance to a preference for deletion and subordination.

Other insightful studies examining specifically L1 formal schemata as a constraint in L2 written English include Hinds' (1983) attempt to demonstrate the transfer of the Japanese ki-shoo-ten-ketsu expository style to written English, and

Ostler's (1987) hypothesis on the transfer of Arabic parallelism. These studies seem to support the notion that culture-specific formal schemata might be part of the procedural knowledge of an L1 discourse grammar and may become available automatically when L2 discourse oral or written production demands them. Related to the notion of proceduralization as the gradual transformation of declarative knowledge into automatization is the concept of nativization as proposed in Kachru (1981). Lowenberg (1986) suggests that nativization refers to a special kind of divergence of a language variety from its parent source involving an extension of an ethnic identity. This phenomenon seems to occur primarily when the L2 has shifted to become the language of personal interaction in a speech community. The language situations in former British colonies as well as in domestic minority enclaves such as American Indian reservations may be such cases (Bartelt 1986). One of the characteristics which causes nativized varieties of English to differ from the parent source is reliance on L1 discourse preferences. These kinds of constraints demonstrate not only the role of transfer but also the possible presence of fossilization in the cultural embedding of English to new social settings. The presence of a positive social attitude toward a non-native variety would not seem to challenge the existence of a psychological process such as fossilization on which the new norms are based, as has been claimed in Lowenberg (1986).

Graphic demonstrations of the sociolinguistic functions of fossilization occur particularly in discourse. Lowenberg (1986) cites a number of examples of L1 norms as a constraint in L2 written English in various parts of the world. In such cases, text and context are nativized and new rhetorical norms contributing to the distinctness of a new regional English emerge. Thus, both in Asia and Africa written English includes indirectness and highly ornamental styles which contrast sharply with the directness and lack of stylistic ornamentation in English. For example, in South Asia embellishment typical of East Indian literary traditions is transferred, apparently to avoid the perceived dullness of established English rhetorical norms (Lowenberg, 1986; Subrahmanian, 1977). In addition, there is a heavy reliance on correlative constructions from Indic languages (Lowenberg, 1986; Kachru, 1985).

Richards (1979) notes that official written English is not felt to be a suitable model for many writers in such places as India and Nigeria where new written communicative styles based in part on folk writing traditions have arisen. Especially in personal letters, the transfer of rhetorical styles is evident. In India, Kachru (1982:365) reports, this genre typically includes the reconstruction of the events in English but in terms of the etiquette of the native culture.

Noteworthy in Lowenberg (1986:10) is a reference to redundancy as a

verbal discourse strategy which marks the speaker for wisdom, age, and knowledgeability in some African cultures. The past and continuing heavy reliance on oral traditions may be a distant connection between the African and the Amerindian forms of rhetorical redundancy. In fact, Millward (1989:31) claims that most forms of orally transmitted literature in non-literate cultures use repetition as one of the devices to aid memory. In addition, Scollon and Scollon (1979) regard redundancy as a feature of the holistic way in which a tribal culture projects its integrative point of view. This rhetorical mode, the Scollons imply, values an easy assimilation of new information and a slow shift of presuppositions. When transferred, these discourse preferences tend to violate established English maxims of manner, quantity and relevance. (Grice, 1975)

In this ethnolinguistic context, the nativization of discoursal transfer could be seen as part of the more general phenomenon of cultural syncretism. Thus, when in the process of cultural contact an unfamiliar social institution is introduced into a group, individuals may tend to identify it with an instance of a class of institutions known to them. A case in point among many American Indian tribes today is the spread of the Native American (Peyote) Church, which in its symbolism and ideology combines fundamentalist Christian elements with those from several indigenous cultures. It could be argued that such examples show how existing schemata act as constraints, selecting primarily compatible features of the newly introduced institution. The resulting gaps in the new knowledge structure may then be filled with typical features of an analogous indigenous institution. The operation of generic schemata in the reconstruction of information has been demonstrated in studies on social cognition (Graesser, et al., 1980; Higgins, et al., 1977; Rice, 1980). Also, the filling of gaps in knowledge with qualities typical of a domain in question has been reported in studies on the recall of narrative texts with details of people or events imperfectly known (Graesser, et al., 1979). The transfer and subsequent nativization of such highly valued cultural features as discoursal norms could be viewed as part of this analogical process in the creation of syncretism. In other words, an L1 formal rhetorical schema may be used to fill an ethnically marked discourse gap in the L2.

To sum up, the aim of this chapter has been to review a previous study on rhetorical transfer and to place it in a broader perspective by exploring insights from studies in processing and nativization. An L1 Apachean oral narrative formal schema which utilizes redundancy for emphasis is often transferred to L2 written English, especially in high demand task situations such as in-class writing. Within a procedural framework, such a phenomenon could be regarded as the need for L1 proceduralized knowledge to fill gaps in L2 declarative knowledge. Once such rhetorical transfer fossilizes and becomes part of an ethnically marked norm, as has

been reported for many cases of new Englishes throughout the world, the presence of nativization may then be assumed. Finally, linguistic nativization may be part of the general process of cultural syncretism in which generic schemata act as constraints in selecting compatible features to fill gaps in new knowledge structures.

REFERENCES

Anderson, J. 1976. *Language, memory and thought.* Hillsdale: Erlbaum.

Anderson, J. 1980. *Cognitive psychology and its implications.* San Francisco: Freeman.

Anderson, R. & P. Pearson. 1988. A schema-theoretic view of basic processes in reading comprehension. *Interactive approaches to second language reading* ed. by P. Carrell, J. Devine and D. Eskey. New York: Cambridge University Press.

Bartelt, G. 1983. Transfer and variability of rhetorical redundancy in Apachean English interlanguage. *Language transfer in language learning* ed. by S. Gass and L. Selinker, 297-305. Rowley: Newbury House.

Bartelt, G. 1986. Language contact in Arizona: The case of Apachean English. *Anthropos* 81.692-695.

Carrell, P. 1983. Some issues in studying the role of schemata, or background knowledge, in second language comprehension. *Reading in a Foreign Language* 1.81-92.

Carrell, P. 1984. Evidence of a formal schema in second language comprehension. *Language Learning* 34.87-112.

Carrell, P. 1987. Content and formal schemata in ESL reading. *TESOL Quarterly* 21.461-481.

Carrell, P. & J. Eisterhold. 1983. Schema theory and ESL reading pedagogy. *TESOL Quarterly* 17.553-573.

Dechert, H. 1984. Second language production: Six hypotheses. *Second language productions* ed. by H. Dechert, D. Mohle and M. Raupach. Tubingen: Narr.

Graesser, A., S. Gordon & S. Sawyer. 1979. Recognition memory for typical and atypical actions in scripted activities: Tests for a script pointer and tag hypothesis. *Journal of Verbal Learning and Verbal Behavior* 18.319-332.

Graesser, A., S. Woll, D. Kowalski, & D. Smith. 1980. Memory for typical and atypical actions in scripted activities. *Journal of Experimental Psychology* 6.503-515.

Grice, H. P. 1975. Logic and conversation. *Syntax & Semantics Vol 3: Speech Acts* ed. by P. Cole & J. Morgen. New York: Academic Press.

Higgins, E., W. Rholes, & C. Jones. 1977. Category accessibility and impression formation. *Journal of Experimental Social Psychology* 13.141-154.

Hinds, J. 1983. Contrastive rhetoric: Japanese and English. *Text* 3.183-195.

Kachru, B. 1981. The pragmatics of non-native varieties of English. In *English for cross-cultural communication* ed. by L. Smith, 15-39. New York: St. Martin's.

Kachru, B. 1982. South Asian English. *English as a world language* ed. by R. Bailey and M. Gorlach. Ann Arbor: University of Michigan Press.

Kachru, B. 1985. Discourse analysis, non-native Englishes, and second language acquisition research. *World Englishes: Journal of English as an International and Intranational Language,* 4.223-32.

Kaplan, R. 1966. Cultural thought patterns in intercultural education. *Language Learning* 16. 1-20.

Kaplan, R. 1972. *The anatomy of rhetoric: Prolegomena to a functional theory of rhetoric.* Philadelphia: Center for Curriculum Development.

Kaplan, R. 1987. Cultural thought patterns revisited. *Writing across languages: Analysis of L2 text* ed. by U. Connor and R. Kaplan. Reading: Addison-Wesley.

Lowenberg, P. 1986. Non-native varieties of English: nativization, norms and implications. *Studies in Second Language Acquisition* 8.1-18.

Mandler, J. 1978. A code in the node: The use of a story schema in retrieval. *Discourse Processes* 1.14-35.

Millward, C. 1989. *A biography of the English language.* New York: Holt, Rinehart and Winston.

Mohle, D. & M. Raupach. 1988. Language transfer of procedural knowledge. *Transfer in language production* ed. by H. Dechert and M. Raupach. Norwood: Ablex

Ostler, S. 1987. English in parallels: A comparison of English and Arabic prose. *Writing across languages: Analysis of L2 text* ed. by U. Connor and R. Kaplan. Reading: Addison-Wesley.

Raupach M. 1987. Procedural learning in advanced learners of a foreign language. *The advanced language learner* ed. by J. Coleman and R. Towell. London: AFLS/SuFLRA & CILT.

Rice, G. 1980. On cultural schemata. *American Ethnologist* 7.152-171.

Richards, J. 1979. Rhetorical and communicative styles in the new varieties English. *Language Learning* 29.1-25.

Rummelhart, D. 1980. Schemata: the building blocks of cognition. *Theoretical issues in reading comprehension* ed. by R. Spiro, B. Bruce, and W. Brewer. Hillsdale: Erlbaum.

Scollon, R. & S. Scollon. 1979. *Linguistic convergence: An ethnography of speaking at Fort Chipewyan, Alberta.* New York: Academic Press.

Subrahmanian, K. 1977. Penchant for the florid. *English Teaching Forum* 15.23-24.

Interethnic Conversation and Second Language Acquisition: Discourse Accent Revisited[1]

Robin Scarcella

In recent years, interethnic communication has become the subject of considerable attention (see, for example, Blom and Gumperz 1972; Erickson 1976, 1979, 1982; Graham 1980; Gumperz 1977; Gumperz and Tannen 1979; Philips 1970, 1972, 1983; Scollon and Scollon 1980, 1981). For a critical review of this research, see Singh, Lee and Martohardjono 1988.

This study examines discourse accent in interethnic conversations. Its purpose is twofold; first, to investigate the conversational difficulties which arise in interactions between native and non-native English speakers; and second, to raise the possibility that extremely proficient second language (L2) learners never completely overcome their discourse accent in the L2. By discourse accent I mean the use of some of the conversational features (CFs) of the learner's L2 in the same way in which they are employed in the learner's first language (L1). I claim here that, for many adult L2 learners, discourse accent persists, perhaps permanently.

The study is based upon the following three assumptions:

(1) Although many CFs appear in all languages, (for example, turn-taking and -giving signals, openings and closings), the use of these features varies widely across cultures. (See, for example, Erickson 1976; Goddard 1977; Gumperz 1977; Tannen 1980; and Wolfson 1981, 1989).

(2) Transfer at the discourse level is pervasive, affecting many culture-specific aspects of the L2, including: (a) the length or amount of discourse time and/or space generally used to employ CFs; (b) the frequency with which CFs are used; (c) the sequential ordering of CFs (in other words, the time and/or place in the conversation in which CFs appear); and (d) the function of CFs.

(3) Discourse accent is very subtle. In fact, normally, it is apparent neither to conversational participants nor to outside observers because it is impossible to adequately observe discourse accent without careful review of entire interactions. Such review necessarily entails disengagement from conversation as well as recourse to conversational detail.[2] Fortunately for the researcher, however, the very conversational problems which stem from discourse accent also display this accent, thereby providing the investigator

with a means of examining that which is normally hidden to the co-participants.

These assumptions will take on increased significance in the discussion of the pilot investigation which follows. Before describing this study, however, I turn first to the rationale.

Rationale

It appears that many non-native English speakers use CFs from their L1 when conversing with native English speakers in English. Their use of CFs has been well documented by anthropologists of education and communication researchers.

Ethnographers of education have primarily focused upon the conversational difficulties which arise when school children (who speak an L1 or dialect other than the standard) do not use Cfs in the same manner as employed by their teachers. (For useful reviews of this research refer to Cazden 1988; Romaine 1984; Spindler and Spindler 1987; Trueba 1989; and Wolfson 1989.) For instance, Philips (1970, 1972, 1983) found that the CFs that are normally expected in US-American classrooms are unfamiliar and threatening to Warm Spring Indian children to perform on a par with their US-American peers. Although not examining CFs exclusively, Philips identified several important differences between the use of CFs employed in the children's homes and schools. She found that the CFs that are normally expected in US-American classrooms are unfamiliar and threatening to Warm Spring Indian children. Importantly, Philips attributed the generally poor classroom performance of Warm Spring Indian children to differences in the use of CFs at home and school.

Following Philips, Erickson and Mohatt (1981) compared two classes of Native American children on an Odawa reservation in Ontario. One class was taught by a Native American and the other by a white instructor. Although both teachers were considered competent and effective by the researchers, the Native American's use of CFs more closely resembled that of the students and, perhaps as a consequence, the Native American students felt more comfortable with this teacher and performed better academically.

In a similar study, Weeks (1983) investigated the mismatch between the CFs used by Native American Yakima children and their white, US-American peers. When compared to US-American children, Yakima children paused longer before answering questions and never interrupted. According to Weeks, the "language deficiencies" which some white teachers attributed to their Yakima students were merely "differences" in the Yakima students' use of CFs.

Like Weeks, Macias (1987) reports on what seems from the US-American

perspective, the poor conversational skills of Papago children. According to Macias, Papago children rarely interact in US-American schools not only because they are shy or restrained but also because they are confused and unsure of what CFs are preferred and expected by native English speakers.

Sato (1981) examined the conversational difficulties of a different sort, those which occur in the language classroom. Her study focused on CFs associated with two specific areas: turn-taking and interruption behavior. The participants of her study were two groups of students studying English as a second language interaction with their instructors. Nineteen of the students were Asian and twelve were non-Asian. Sato found that the Asian students took significantly fewer speaking turns than their non-Asian classmates.

Numerous other differences in the use of CFs in students' homes and schools have been reported in the literature. (See for instance Au and Jordan 1981; Heath 1983, 1986; and Michaels 1981.) Most of these studies suggest that children who speak English as an L2 or second dialect rely on the CFs of their L1 or first dialect when conversing with their teachers in English. Such investigation documents the occurrence of discourse accent.

A different set of studies by communication researchers provides further evidence for the existence of discourse accent. In a series of studies, Gumperz and his colleagues (Gumperz 1977, 1978; Gumperz and Tannen 1979) found that Indian and Pakistani workers who had interacted with British professionals frequently experienced conversational difficulties which led to inaccurate character judgements. These conversational difficulties were related to the Indian and Pakastani speakers' use of CFs from Punjabi, their L1, when conversing in English, their L2.

Graham (1980) claims that part of the over ten billion dollar debt which the United States owes Japan each year can be explained in terms of conversational difficulties. In investigating sales negotiations between American and Japanese businessmen, Graham found that the Japanese businessmen used the CFs of Japanese when conversing in English. For example, when buying goods from the Japanese, the Americans offered what they believed to be a generous price. When the Japanese did not react favorably to their offer, but instead paused, the Americans offered the Japanese even more money for their goods. The Americans thought that the Japanese paused because they were dissatisfied with the Americans' first offer. However, when Graham interviewed the Japanese businessmen, he found them to be puzzled. They did not understand why the Americans had offered them so much money for their goods. They had only paused after the Americans' first offer to reflect upon the interaction. As Graham points out, in conversation, silence is more frequent and positively valued in Japanese society than it is in American.

Despite progress made, there are, however, gaps in the research. Few studies have been undertaken which systematically describe interethnic conversation between US-Americans and Latinos of Mexican ancestry. Also, rather than using native speaker baseline data to observe differences between interethnic and native speaker conversations, most researchers have utilized intuitions and translations. (See, however, Erickson 1979; and Graham 1980 for notable exceptions.) Moreover, with the exception of Sato (1981, 1989), investigators have not viewed interethnic conversations from the perspective of L2 acquisition. In light of these gaps in the research, the present study employs comparable samples of speech corpora in investigating two hypotheses pertinent to L2 development:

> Hypothesis #1 (H1): Conversations between native and non-native speakers are characterized by more frequent conversational difficulties than conversations between native speakers. This hypothesis stems from research by Erickson (1979), Graham (1980), Gumperz (1977), and Gumperz and Tannen (1979).
>
> Hypothesis #2 (H2): Highly proficient English L2 learners, who speak Spanish as an L1, use some English Cfs in the same way in which they are employed in Spanish.

In keeping with previous research, (for example, Graham 1980; Scollon and Scollon 1980, 1981), in examining Hypothesis #1, I used abrupt topic shifts and interruptions as measures of conversational difficulty. In investigating Hypothesis #2, I examined topic selection as well as back channel cues and pause fillers. "Topic selection" refers to the propositions (or set of propositions) which speakers select to express a concern. It was analyzed because abrupt topic shifts are said to arise when speakers do not share the same rules for topic selection (Keenan and Schieffelin 1977). I use the term "back channel cue" to refer to verbal expression such as "sí," "muy bien," and "uhum" in Mexican Spanish and "yeah," "I see," and "uhum" in American English which signal listening attention; (see for example, Duncan 1972, Schegloff 1982; and Yngve 1969). By pause fillers, I am referring to verbal expressions such as "este" and "pues" in Spanish and "ya know" and "uhm" in English which enable interlocutors to maintain their speaking turns while formulating their thoughts. (See Appendix A for a complete description of the measures and definitions used.) Back channel cues and pause fillers were studied because research by Erickson (1979) and Gumperz (1977) indicates that interruptions occur when speakers do not share the same use of CFs. To test these two hypotheses, the following study was undertaken.

Methodology

Subjects

Ten Spanish speakers and ten English speakers participated in the investigation. The Spanish speakers were highly proficient in English, their L2, spoke the variety of Spanish spoken in Jalisco, Mexico, arrived in the United States before age seven (two were born in the United States), ranged in age from 19 to 24, and were undergraduates at the University of Southern California. The native English speakers spoke the variety of English spoken in California, (Standard West Coast English [SWCE]), ranged in age from 19 to 23, and were also undergraduates at the University of Southern California.[3] Three of the Spanish speakers and three of the English speakers were males; the remaining were females. In order to control for familiarity, only those subjects were selected who were not previously acquainted.

Task

The subjects were paired in such a way that fifteen conversational dyads were formed. These consisted of five Spanish/Spanish dyads, five English/English dyads and five English L1/English L2 (interethnic) dyads. The following instructions were given to the subjects.[4]

> Introduce yourselves and get to know one another.
> Help yourselves to the food on the table. You can
> end the conversation whenever you feel ready.

Next, the subjects were led to a room in which they found a table and two chairs, stacked one upon another. The only items on the table were cookies, cups, and apple juice. The subjects arranged their chairs behind the table within a specially designated five foot area. Conversations were videotaped with JVC equipment in full view of the participants in such a way that bodily movement was displayed, the subjects' interactions demonstrated, and the table clearly seen. This provided a visual account of conversational difficulties and discourse accent.

In order to elicit the participants' own opinions of the conversations, the subjects were then interviewed. Following Gumperz (1978); Labov and Fanshel (1979); McCurdy (1980) and Tannen (1979), the playback interview was employed. Subjects were asked to listen to their own audio-taped conversations, controlling the tape recorder to comment whenever they wished. The non-native English speakers were directed to comment in Spanish or English, the language they felt most comfortable speaking. Like McCurdy (1980), I first warned subjects that I would be less responsive than usual, refraining from offering opinions until I had heard theirs. All interviews were audio-taped with a second recorder.

Analysis

The audio recordings were then transcribed according to conventions set forth by sociologists of language (see, for example, Sacks, Schegloff and Jefferson, 1974; refer to Appendix B for a description of the notational devices used). Having once obtained an audio-visual account of the subjects' interactions, transcriptions, and the subjects' own opinions of the conversations, the data were then coded and analyzed.

Only those variables were quantified which obtained satisfactory inter-rater reliability coefficients when two raters coded the features independently; all other features were analyzed qualitatively. Hence, quantitative analyses are provided for interruptions, back channel cues and pause fillers, while qualitative analyses are provided for abrupt topic shifts and topics. (Inter-rater reliability coefficients are given in Appendix C.)

Findings

The results are discussed in three parts. The first two pertain to each of the two research hypotheses while the third concerns the analysis of the playback interview.

As will be seen in the discussion which follows, there were striking differences in the frequency with which communication difficulties occurred in the interethnic and native speaker conversations.

Abrupt topic shifts. One of the most salient conversational problems of the participants in interethnic interactions was the inability to sustain a coherent conversation for any sizable length of discourse. The conversationalists often jumped from one topic to the next, disengaging themselves from the subjects just immediately discussed and turning to entirely unrelated subjects. These abrupt topic shifts were neither relevant to the discourse history nor marked with any metalinguistic warning (such as "not to change the subject, but..."). Keenan and Schieffelin (1977) refer to such discourse as discontinuous. Example (1) is illustrative.

(1) Context: J and P are talking about sports. (J is the L1 speaker and P is the L2 speaker.)

J: Do you golf?
P: No: I=
> J: No. Neither do I. uhm What are you majoring in.

In contrast, conversations between speakers of the same ethnic identity contained larger stretches of smooth discourse which focussed on a number of linked topics, linked in the sense that the content of one topic was drawn from previous conversational history (see example (2)).

(2) Context: A and L are talking about their majors.

A: And what's your maj[or.
L: [I'm a cinema television major.
A: And what do you do when you graduate with that?
L: I hope to be a director one day.
A: Real[ly?
L: [A real live director.
A: Of television or movie?
L: Television
A: Television. Why television opposed to movies.
L: 'Cuz television is what everything's switching to because of cable tv. So it interests me.

In example (2), when L mentions that he is majoring in cinema television, A asks him what he intends to do with his major. L's major then becomes linked to his occupation which, in turn, becomes linked to a discussion of why L prefers to be a television rather than a movie director.

This is not to say, however, that abrupt topic shifts were found throughout the interethnic conversations. Rather, they only seemed to appear in situations in which participants lacked shared background knowledge. Once common grounds were established, conversation generally flowed smoothly. Consider, for instance, example (3).

(3) Context: P and J discover that P used to live in the same dormitory as J. (P is the L2 speaker and J is the L1 speaker.)

P: They have a very good school here[from what I know.
J: [Yeah they do.
P: Yeah they do.
J: Yeah
P: So where do you live?
J: uhum On campus
P: uhum

J: I live in Residence West.
P: Oh really? What floor.
J: I'm on eight.
P: Oh real[ly
J: [Do you live there?
P: I used to live there last[year.
J: [Oh really? So did I.

... conversation proceeds with no abrupt topic shifts for 25 seconds.

J: Oh you are I was in 80- I mean I was in 1003 (ten-0-three) in the uh D room. ((giggle))
P: Isn't that weird. Oh my God. Where are you living now.

As illustrated in example (3), once speakers hit upon a common topic of conversations, topics became *linked*. It would appear, then, that abrupt topic shifts are not specific to interethnic communication. More generally, they are characteristic of conversations between people who have little in common. However, this does not preclude the possibility that some abrupt topic shifts are unique to interethnic conversations, arising directly out of differences in participants' expectations concerning: (1) what types of discourse topics are appropriate to discuss with strangers; (2) when these topics should be introduced; and (3) how much time and/or discourse space they should occupy. I will return to this possibility later when I discuss discourse accent and topic selection. Now, however, I turn to a second marker of conversational difficulties, interruptions.

Interruptions. As seen in Table One, interruptions were far more characteristic of the interethnic conversations than the Spanish conversations.

Both interethnic and English conversations showed a larger number of interruptions than one would expect by chance. Indeed, there were almost twice as many interruptions in the interethnic conversations as there were in the L1 conversations. This finding corroborates those of Gumperz 1978; Gumperz and Tannen 1979; and Scollon and Scollon, 1980.[5]

H2: Discourse Accent

Having discussed two of the CFs characterizing interethnic conversational difficulties, I move to a possible source of these difficulties, discourse accent. Here, I investigate differences in topic selection as well as two CFs (back channel cues and pause fillers) in Spanish, English and interethnic conversations.

Table 1 Number of interruptions in proportion to number of utterances in Spanish, English, and Interethnic (English L1/English L2) conversations

Spanish Conversations		English Conversations		Interethnic Conversations	
$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
.03	.01	.02	.002	.05	.05
(11.452)		(9/5333)		(20/436)	

$X^2 = 8.16$, df = 2, p = .02

Topic Selection. One area of discourse in which transfer has already been reported is in the use of topics (Richards 1980). An obvious difference between Spanish and English conversations concerned the types of topics discussed. Spanish speakers discussed topics of a far more personal nature than English speakers. In fact, while all Spanish conversations included discussions of family relationships and ages of interlocutors, such talk was virtually absent in the English conversations. Example (4) illustrates the types of topics discussed by the Spanish speakers.

(4) Context: L has just told S that she is married.

S: *Cuánto tiempo tienes casada?*
How long have you been married?
L: *Tengo cuatro años.*
Four years.
> S: *Y te gusta ser casada?*
And do you like being married?
L: *Sí. Mucha responsibilidad pero me gusta.*
Yes. It's a lot of responsibility but I like it.
S: *Sí e: ( ) (pause 0.2) Y nunca piensas y por qué me casé tan joven?*
Yes uh: ( ) (pause 0.2) And don't you ever think why did I get married so young?
> S: ((giggle)) *Y qué edad tiene tu esposo?*
((giggle)) And how old is your husband?

Such exchanges as in example (4) are clearly inappropriate among strangers

in English. In fact, personal discussions appear, at least in this situation, to be taboo in English since they violate the participants' rights to privacy (Brown and Levinson 1978).

What happens when Spanish speakers converse with native English speakers in English, their L2? Do they introduce topics of a personal nature as they do in their L1, therefore supporting H2? No. Indeed, Spanish speakers appear to avoid such intimate talk altogether in interethnic conversations. Perhaps this is because the Spanish speakers in this study had already acquired knowledge of topics which are appropriate to discuss with US-American strangers.

While no evidence can be found for H2 in terms of the type of topics discussed, discourse accent becomes apparent when we consider the sequential order in which topics occur. Although one of the characteristics of small talk between strangers is that topics vary widely, some topics are highly predictable. (For example, in this study, once the interlocutors discovered that they were both students, classes inevitably became the subject of conversation.) Even more interestingly, the approximate order in which these topics occur is also predictable. In fact, it is possible to formulate an approximate sequence in which topics appear in both Spanish and English conversations. (Refer to Table Two.)

Table 2 Approximate sequence in which topics were discussed in English and Spanish dyadic conversations*

English	Spanish
major	major
year at school	year in school
career plans	classes/USC
classes/USC	family (including position in the family)
residence in Los Angeles	career
residence outside of Los Angeles	Mexico
(family)	residence in Los Angeles

*Orders were determined by two raters coding independently. The inter-rater reliability coefficient obtained for these orders was .86.

However, not surprisingly, the sequential ordering of topics in Spanish interactions differs from the ordering of topics in English interactions. For instance, although career plans were discussed in both Spanish and English conversations, they were discussed much later (and occupied less discourse time and space) in Spanish conversations. Furthermore, the family, which was a

frequent topic among Spanish speakers was, for the English speakers, optional, discussed late in the conversation, if it was discussed at all.

While it was possible to predict the sequence in which topics would appear in Spanish and English interactions, topics were less predictable in the interethnic conversations. Perhaps this is because participants in the interethnic conversations could not anticipate their partner's topics and switched from one subject to the next so that they could get their conversation *back in order.* This might explain the frequency of the abrupt topic shifts in the interethnic conversations.

Back channel cues. A second area in which discourse transfer is apparent is in the use of back channel cues. The data indicate that back channel cues are used very differently by Spanish and English speakers.

For instance, as seen in examples (5) and (6), there was a tendency for Spanish, rather than English, speakers to exchange back channel cues.

(5) Context: P and J are talking about USC.

P: *Y e te gusta aquí la USC*
And uh do you like it here USC?
J: *Sí. Me gusta. Hay cosas que me gustan y cosas que no me gustan.*
Yes. I like it. there are things that I like and things that I don't like.
P: *Cómo cuál?*
Like what?
J: *que las classes están muy difíciles*
that the classes are very difficult
P: *Uhum sí*
Uhum yes
J: *S*[*í*
Yes
P: [*Uhum*
Uhum
J: *Para mí han sido muy difíciles*
For me they have been very difficult

(6) Context: S and L are talking about their majors.

S: *Qué que te gustaría estudiar?*
What what would you like to study?
L: *E Deseo estudiar ciencia política*

Uh I want to study political science.
S: *Sí?*
Yes
L: *Sí*
Yes
S: *Muy bien*
Very good
L: *Uhum Me gusta*
Uhum I like it.

Although back channel cues were exchanged among English speakers, back channel cues exchanged back and forth (hereafter termed *exchanged back channel cues*) as in examples (5) and (6) were considerably less frequent. (For example, while there were 31 instances of exchanged back channel cues in the Spanish conversations, there were only seven instances of exchanged back channel cues in the English conversations.) As expected, there were more exchanged back channel cues in the interethnic conversations than in the English conversations. Thus, Spanish speakers used exchanged back channel cues to a greater extent than English speakers, especially in their L1 but also in their L2.

Table 3 Number of exchanged back channel cues in proportion to total utterances in Spanish, English, and Interethnic (English L1/English L2) conversations

Spanish Conversations		English Conversations		Interethnic Conversations	
$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
.07	.002	.01	.004	.02	.01
(31/452)		(7/533)		(10/436)	

$X^2 = 25.3$, df = 2, p = .001

Another difference in the way Spanish and English speakers signaled their listening attention concerns *repetition* as a back channel cue. To display interest in the conversation, Spanish speakers often repeated the speaker's previous utterance as in example (7). English speakers used repetition as a back channel cue less frequently. While these occurred 19 times in the Spanish conversations, they occurred only eight times in the English conversations. Although there were more instances of repetition as a back channel cue in interethnic conversation than in the

English conversations, differences between the interethnic and English conversations were not statistically significant. (Refer to Table Four.)

Table 4 Numbers of repetitions used as back channel cues in proportion to total utterances in Spanish, English, and Interethnic (English L1/English L2) dyadic conversations

Spanish Conversations		English Conversations		Interethnic Conversations	
$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
.04	.002	.02	.004	.03	.002
(19/452)		(8/533)		(11/436)	

$X^2 = 6.88$, df = 2, p = .05

(7) Context: T and M are discussing their families.

T: *Y cuántos años tienen los ninos?*
And how old are the children?
M: *Uno tiene tres años y la niña (mía) tiene ocho meses.*
One is three years and my little girl is eight months.
T: *Ocho meses*
Eight months
M: *Uhum*
Uhum
T: *Y:: Tu esposo? Tiene?*
A::nd Your husband? He's (how old)?
M: *Veinte y dos a* [*ños*
22 years
T: [*Veinte y dos años*
22 years

As seen in example (8), these were usually employed by the English L2 speaker.

(8) Context: M and C are discussing C's home. (M is the L2 speaker and C is the L1 speaker.)

M: Are you from uh out of state or=
C: No I'm from Northern California
M: Northern California
C: By the Bay Area
M: By the Bay Area

Unfortunately, as illustrated in example (9), the Spanish speaker's use of repetition as a back channel cue sometimes resulted in interruptions in the interethnic conversations.

(9) Context: M and J are discussing their majors. (M is the L2 speaker and J is the L1 speaker.)

M: ... I'm a junior in psychology
J: Psychology?
M: Yes. Psychology
J: Really
M: Yeah
J: I'm unde ⌜clared. Did you go here last year? (pause 0.8)
M: ⌊Undeclared
J: Did you go here last year?

In example (9), when M partially repeats J's utterance as a back channel cue, J continues to ask M a question, talking right over J's back channel cue. This prevents M from hearing J's question and responding to it. Thus, the flow of the conversation is interrupted.

A further difference in listener response cues by Spanish and English speakers concerns the use of consecutive back channel cues; that is, the use of several back channel cues consecutively in the same turn. Though frequent in the Spanish conversations, these occurred in only one instance in the English conversations. (See Table Five.)

As shown in example (10), rather than indicate listener support, English speakers sometimes used consecutive back channel cues to display sarcasm. Thus, it appears that in certain situations, consecutive back channel cues function differently in Spanish and English.

(10) Context: P and J are just about to leave. J suggests taking the cookies and P responds with a joke that does not go over very well with J. (J is the L2 speaker and P is the L1 speaker).

P: Guess I'll eat the mike.
J: Huh?
P: That's a joke.
J: Oh Uhm I get it Funny

Table 5 Number of consecutive back channel cues in proportion to total utterances in Spanish, English, Interethnic (English L1/English L2) conversations

Spanish Conversations		English Conversations		Interethnic Conversations	
$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
.02	.009	.002	.004	.01	.08
(22/452)		(1/533)		(6/436)	

$X^2 = 28.2$, df = 2, p = .001

It is interesting to note that there are slightly fewer consecutive back channel cues in the interethnic conversations than expected. One possible explanation for this is that the L2 learners have not yet learned how to back channel in this manner (Hatch personal communication). Another possibility is that the native English speakers thwarted the L2 learners' efforts to exchange back channel cues by changing the topic when their interlocutors began back channelling.

The analysis of back channel cues has led us to the conclusion that paying attention in English may be very different than paying attention in Spanish. In general, Spanish speakers provide more salient back channel cues than English speakers. English speakers, on the other hand, seem less tolerant of back channel cues, often interpreting consecutive back channel cues as signals that speakers desire to give up their turns of talk. Consequently, while Spanish speakers might perceive English speakers as being inattentive, English speakers might view Spanish speakers as taking too much time displaying their attentiveness, even preventing conversationalists from getting directly to the point.

Pause Fillers. A third area in which discourse transfer was found was in the use of pause fillers. One significant difference between the Spanish, English and interethnic conversations was the use of pause fillers preceding answers to questions (refer to Table Six).

The data displayed in Table Six indicate that although English speakers used

pause fillers less frequently than expected, English as well as Spanish prefaced their answers to questions with pause fillers, at least in certain situations. However, Spanish speakers employed pause fillers before their responses to questions more consistently than English speakers (in both their L1, as in example (13) and their L2, as in example (11)). (See also Table Seven.)

Table 6 Number of pause fillers preceding responses to questions in proportion to number of utterances in Spanish, English and Interethnic (English L1/English L2) conversations

Spanish Conversations		English Conversations		Interethnic Conversations	
$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
.10	.00	.03	.00	.08	.00
(44/452)		(18/533)		(35/436)	

$X^2 = 18.41$, df = 2, p = .001

(11) Context: S and L are talking about where they live.

S: *Vives aquí?*
Do you live here?
L: *este Vivo dos cuadros de aquí*
uh I live two blocks from here
S: *Con tus papás?*
With your parents?
L: *este No. Estoy en un apartamento con unas otras compañeras.*
uh No. I'm (living) in an apartment with some friends.

(12) Context: S and M are talking about their majors. (S is the L1 speaker and M is the L2 speaker.)

S: And what are you majoring in.
M: uhm Chemical engineering.
S: Oh really?
M: Yes

The frequency with which pause fillers were used constitutes a further

difference in the use of pause fillers by Spanish and English speakers. Overall, Spanish speakers used significantly more consecutive pause fillers than English speakers, again, in both their L1 and their L2, (see Table Eight). Moreover, while the Spanish speakers seemed to assume that consecutive pause fillers functioned to maintain one's speaking turn, as in example (13), in contrast, the English speakers sometimes interpreted consecutive pause fillers as signals that speakers desired to relinquish their turns of talk (see example (14)).

Table 7 Number of pause fillers preceding responses to questions in proportion to number of utterances in Spanish, English and Interethnic (English L1/English L2) conversations

English L1 Speakers		English L2 Speakers	
$\bar{X}$	SD	$\bar{X}$	SD
.04 (10/237)	.00	.13 (25/199)	.00

(13) Context: S seems to be trying to keep the conversation going. Notice that her conversational partner does not interpret the consecutive pause fillers in S's speech as a signal to take the floor.

S: *Vamos a ver. Oyes (pause 0.6) Y qué más cuentas? (pause 0.4) Digo- este:: e Por qué te gusta trabajar aquí?*
Let's see. Listen (0.6) And what else can you tell me? (0.4) I say- uhm:: uh Why do you like working here?

(14) Context: J and K are discussing the advantages of having a college degree.

J: Well uh (pause 0.2) once you have a degree:: (pause 0.6) you can go into a lotta different kinds of works. It depends on ya know on- Usually the student will pick the best job the uh moneywise and uh the benefits and uh stuff like that uh (pause 0.2)
S: So I- I'm a business major.

Table 8 Number of consecutive pause fillers in proportion to number of utterances in Spanish, English, and Interethnic (English L1/English L2) conversations

Spanish Conversations		English Conversations		Interethnic Conversations	
$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
.04 (18/452)	.001	.004 (2/533)	.006	.01 (5/436)	.08

$X^2 = 19.75$, df = 2, p = .001

In summing up the analysis of pause fillers, we find that Spanish speakers use this CF to a far greater extent than English speakers, both in their L1 and in their L2. Furthermore, when Spanish speakers converse with native English speakers and use pause fillers consecutively (as they do in Spanish), English speakers often interpret these pause fillers as turn-giving signals. This in turn leads to interruptions. Thus, while Spanish speakers might perceive English speakers as curt, English speakers might regard Spanish speakers as slow.

The analysis of the CFs discussed above provides evidence for conversational difficulties in interethnic conversation and discourse accent. The analysis of the playback interviews demonstrates the subjects' awareness of these phenomena.

Analysis of the Playback Interview

What is particularly noteworthy about the playback interviews was that, although all subjects stated that they felt less comfortable in the interethnic conversations than they did in conversations between speakers of the same ethnic identity, not a single subject indicated awareness of: (1) the conversational difficulties which dotted their speech (characterized by abrupt topic shifts and interruptions); or (2) the different uses of CFs which might have led to their apparent discomfort. It appears, therefore, that the participants in the interethnic conversations believed that they shared the same linguistic code when, in fact, they did not. While the speakers seemed to share the same use of syntax, morphology, and lexicon, this study demonstrates that their use of CFs was quite different.

Disclaimers

Yet, things may not be this simple. Clearly, some disclaimers are in order. First, as is sometimes pointed out, personality factors affect the use of CFs. In order to overcome the effect of individual differences due to such variables as personality and performance slips, this study should be replicated with larger numbers of subjects. Second, in interpreting the results, it was impossible for the

investigator to escape her own socio-cultural background, Anglo-Californian. Investigations by Chicano researchers should also be undertaken. Third, the results of this study could be an artifact of the research task, video-taped conversations between strangers in a semi-laboratory situation. Further studies should investigate situational variables such as sex, status and familiarity which affect interethnic conversation. Fourth, since the conversations were affected by transfer from Spanish, baseline data should also be collected from native Spanish speakers who have not been exposed to English. Further, it is likely that L2 learners are exposed to several varieties of English besides the Standard (Eisenstein 1979, 1989). It is possible that the Spanish speakers in this study may have been able to integrate features of more than one dialect into their English. Here, analysis of the actual TL input received by learners is essential. Goldstein (1987) suggests that in examining the TL input, researchers should examine such variables as the covert prestige of the TL group, the status of the TL group with respect to one's own or one's desired status, the difficulty or ease of establishing and maintaining relationships with members of the TL group, the attitudes of one's own ethnic group to the TL and vice versa, and the instrumental value of using the TL. Finally, as Erickson (1979) suggests, the fact that conversational difficulties are frequent in interethnic conversations could stem from prejudice rather than use of Cfs. (For a related explanation, refer to Ogbu and Matute-Bianchi 1986.) This, too should be investigated.[6]

Despite these reservations, the differences between the three speech corpora (Spanish, English and interethnic) are clear enough to provide evidence in support of the two research hypotheses: (1) the CFs associated with conversational difficulties occur more frequently in interethnic conversations than in conversations between speakers of the same ethnic identity; and (2) highly proficient L2 learners never completely overcome their discourse accent in an L2. Thus, there may be here a form of fossilization.

There are several plausible explanations for discourse accent related to fossilization: the variety of input to which the L2 learners were exposed, the extent of the learners' exposure to and interaction with speakers of SWCE, affective factors, and language transfer.

In several papers, Selinker has discussed the concept of fossilization. (See for instance, Selinker 1969, 1972, Selinker and Lamendella 1981; Selinker, Swain and Dumas 1975; Tarone, Fraunfelder and Selinker 1976; See also Adjemian 1976.) One definition is the permanent failure of L2 learners to develop complete mastery of TL norms. Another definition is a cessation of interlanguage learning often far from target language norms.

There are several reasons why this study suggests that CFs are possible

objects of fossilization. First, the L2 subjects' use of CFs frequently diverges from the native English speakers'. Their L2 production is dotted with numerous deviations from SWCE norms. Second, these deviations do not occur randomly. Rather they display highly predictable, internally consistent patterns which recur systematically in the data. Third, and most importantly, since the subjects' use of CFs appears to result from wholesale transfer of the use of CFs (rather than the creative adaptation of these features into English), we might suspect that CFs emerged early on in the learners' L2 production and remained unchanged over time (Weinreich 1954). This, then, constitutes evidence for fossilization.[7] Yet the evidence is inconclusive. (Refer to footnote 7 for a discussion of some of the problems involved in obtaining evidence for fossilization at the discourse level. Moreover, an alternative explanation is plausible.

While only long-term investigation can determine whether the L2 speakers' use of CFs has fossilized, there is some evidence for the counter position: that fossilization is not likely. To begin with, these speakers do not seem to be deficient in their ability to use Cfs. I would be reluctant to claim that their use of Cfs has stopped short of TL norms. Even more importantly, Chicanos have commented that these speakers appear to be using Cfs in the same way in which they are used by other members of the Chicano community, some of whom have been living in the United States for several generations.

It is possible that the learner's L2 development has not fossilized, but instead, has evolved into a fully developed dialect of SWCE, Chicano English (CE). Here we might have stabilization not leading to fossilization. In recent times, Chicano English (CE) has become widely documented in the literature. (See for example, Cohen and Beltramo 1977; Duran 1981; Metcalf 1970, 1974; Ortego 1970; Peñalosa 1980; Thompson 1974). Research by Duran (1981), Gingras (1971) and others demonstrates that, contrary to the tacit assumption that CE reflects internal linguistic homogeneity, CE is highly heterogeneous. It may vary along a number of linguistic parameters, including pronunciation, morphology, syntax and discourse. Thus, it is not surprising that, while some varieties of CE might differ very radically from SWCE, others might resemble SWCE in all aspects with the exception of a few surviving traces of Spanish at the discourse level. This explanation is consistent with Selinker et al.'s (1975) suggestion that fossilization may, with the passage of time, evolve into a dialect in its own right.

It is also possible that the adult learners in this study did not have enough SWCE input to develop SWCE use of CFs. Spanish speakers who have spent all their lives in the United States may have fairly limited contacts with speakers of Standard English. Intergroup contact, where it exists, may be marginal in its impact.[8] Although this explanation may be appealing, it does not seem likely that

learners who were born in the United States, had completed their entire elementary educations in the United States and were upper division university students at USC did not have enough exposure to SWCE in their schools, on television, and in the movies.

It seems more likely that the learners in this study had adequate exposure to CFs, but lacked interaction with native speakers of SWCE. The negative psychological climate created by conversational difficulties may have discouraged these speakers from conversing with speakers of SWCE. Gumperz and Tannen (1979) suggest that those who share the same use of CFs tend to become "clannish". That is, they tend to stick together. In terms of Bishop's (1979) similarity-attraction theory, it is easier to speak to those who share the same CFs than it is to speak to those who do not. This may explain why L2 learners so frequently stick together rather than interacting with native English speakers. Fewer conversational difficulties arise.[9]

The problems of conversing in a new culture may create anxiety, fear, and even depression for some language learners. Learners may find themselves conversing with speakers whose CFs are associated with beliefs and values which are totally different from their own. Rather than reconciling many aspects of their personalities, some learners may prefer not to converse with native speakers of SWCE.

Other affective factors which might explain why learners fail to acquire CFs are tied to speaker identity (see Zuengler 1989). It is often noted that CFs enable speakers to maintain their uniqueness while simultaneously strengthening their roots with social, cultural, and ethnic backgrounds. As long as speakers hold different beliefs and these beliefs are associated with CFs, such features will probably be passed on subconsciously from one generation to the next. Although minorities see that using the language of the majority will allow them access to socio-economic power, they may also wish to retain and even reinforce their own cultural ties. Maintaining the CFs of one's L1 would be an obvious sign of rejecting the L2; retaining the CFs is a subtle compromise.

It may also be that the learners in this study were not motivated to acquire the CFs in their L2 since they can transfer their knowledge of the CFs from Spanish when conversing in English and are usually unaware of the communication difficulties which arise as a consequence of this procedure. Kellerman (1979) suggests that some types of transfer occur when speakers perceive their L2 as being similar to their L1. Since the L2 speakers in this study seemed to perceive their L2 as identical to their L1, one of the crucial conditions enabling transfer (in Kellerman's terms) may have been met. Because the Spanish speakers were able to use CFs from Spanish when conversing in English and did so with no apparent

negative reaction from native speakers of SWCE, they may have believed that they had already acquired nativelike use of Cfs in SWCE.

Conclusion

Since the L2 speakers' use of Cfs displayed traces of Spanish, I have claimed that they spoke with a discourse accent. Undoubtedly, there is no single explanation for discourse accent. A myriad of factors are most likely needed to determine the extent L2 learners speak with a discourse accent in specific situations with specific addressees.

In concluding, it should be stressed that there is nothing wrong with speaking with a discourse accent. In fact, each of us speaks with a discourse accent. In Ortego's (1970) words:

> Some social scientists have claimed that an accent can be a serious linguistic handicap in the realization of full educational and economic development. This may be right, but for the wrong reason. To begin with, an accent can be a serious handicap if the auditor chooses to make it a handicap. *Admittedly, an accent is merely a dialect...Linguistic science has pointed out that we all speak differently, that we all speak a dialect of some kind or another.* (p. 77, emphasis my own)

NOTES

1. I would like to thank Susan Gass and Larry Selinker, the editors of this volume, for their detailed suggestions for revisions. I am also grateful to Evelyn Hatch, Elaine Andersen, Stephen Krashen and William Rutherford for helpful suggestions on earlier drafts of this chapter. Special thanks are also due to Larry Selinker for expanding my understanding of fossilization, to Gustavo Gonzalez for commenting on the section on Chicano English, and to Michael H. Long, for contributing to the development of the research design.

2. Transfer at the discourse level is such a habitual, subconscious accomplishment that L2 learners are rarely able to observe its existence. Normally, it must be observed in context. This is because the discourse transfer I am referring to here is not displayed by form alone. Rather it is displayed by the amount of discourse time and/or space CFs occupy, their frequency of occurrence, distribution and functions.

3. We can assume that all of the L2 learners were highly advanced in their English proficiency since they had graduated from high schools in the United States, were enrolled in regular university courses, and made no lexical, morphological or syntactic errors when conversing with native English speakers in this study.

4. These instructions were designed so as not to accord higher status to either of the participants.

5. Here it is important to point out that although the number of interruptions which occurred in the interethnic conversations may appear small, twenty actually represents an unusually large number. As Sacks, Schegloff and Jefferson (1974) point out, interruptions violate a speaker's right to the floor; they do not normally characterize smooth conversation. I should also mention that overlaps (of less than one syllable in length) and back channel cues were not included in the analysis of

interruptions.

6. The data indicate that prejudice was a variable in the study which should be further investigated. For example, all of the English L1 speakers initiated the conversations and, for the most part, controlled them. In addition, while speakers in the English and Spanish L1 conversations tended to sit close together, speakers in the interethnic conversations sat far apart. This could be another indicator of prejudice.

7. Problems encountered when seeking observable evidence for fossilization include the following: (1) obtaining evidence for the permanent cessation of L2 learning; (2) distinguishing stable vs. unstable production of CFs; and (3) overgeneralizing the results obtained in one discourse domain to other discourse domains.

To provide evidence that a given CF has fossilized, it is necessary to demonstrate that the feature has completely ceased development towards the TL norm. This entails analyzing the learner's speech across time, ideally until the learner's death, but, more practically, for a long time. (Five years might be considered reasonable.) As mentioned earlier, a serious flaw in the present research design is that speech data are elicited at only one time. This causes us to lose sight of the fact that CFs may merge, disappear, re-emerge, take on new forms, functions, co-occurrence restrictions, distributions, etc. (Refer to Adjemian 1976.)

A related problem concerns distinguishing stabilized from unstabilized production of CFs. One of the primary characteristics of fossilized L2 production is that it remains stable, that is, unchanged over time. What appears stable at time 1 may appear unstable at time 2. Thus, in approaching the problem of stabilization, it is necessary to examine L2 acquisition at various intervals, again, over a lengthy time period.

Another problem concerns overgeneralizing the results based on a single discourse domain to other discourse domains. It is frequently noted that no individual speaks the same at all times; speech varies according to the circumstances of the immediate discourse domain. (See, for instance, Hymes 1962, Fishman 1972, Labov 1965). Examining only a single domain, casual conversation between strangers, prohibited me from determining whether the learners' L2 production had fossilized across some domains, but not others or in all domains. As Selinker and Lamendella (1981) suggest, the same individual may display varying amounts of fossilization in his/her speech according to the circumstances of the immediate discourse domain. They state:

> It is our view the different levels (and different discourse domains) of language structure may be differentially fossilized at varying degrees of approximation to TL norms. (p.219)

Here, what appears to be fossilized in discourse domain 1 may appear productive in discourse domain 2. This points out the importance of examining data gathered in a variety of discourse domain.

8. This dialect could result from the merging of three systems (Spanish, English and the learners' own interlanguage) into a fourth new one, CE, previously nonexistent. On the other hand, it might evolve from exposure to CE norms. Thompson (1974) suggests that urban barrios such as those in Los Angeles are rapidly becoming populated with members of third and fourth generations. He states:

> Language problems will not be a result of Spanish interfering or competing with English, but of a nonstandard dialect of English conflicting with Standard English.
> (Thompson 1974, p. 17)

9. Peñalosa (1980) states:

> From the limited number of studies available we know that Chicano youth are more likely to model their speech after Chicano peers than after their Anglo peers. For example, they generally lack the pin/pen merger (Riverside, California)

> (Terrell, 1978) manifested by Anglo youth. The whole area of peer group linguistic norms among Chicano youth remains to be explored. (146-147)

One would, however, expect Chicanos to receive ample exposure to SWCE in a university setting.

REFERENCES

Adjemian, C. 1976. On the nature of interlanguage systems. *Language Learning* 26.297-320.

Au, K. and C. Jordan 1981. Teaching reading to Hawaiian children: Finding a culturally appropriate solution. *Culture and the Bilingual Classroom* ed. by H. T. Trueba, G. Guthrie and K. Au. Rowley, MA: Newbury House Publishers.

Blom, J. and J. Gumperz 1972. Social meaning in linguistic structures: code-switching in Norway. *Directions in Sociolinguistics* ed. by J. Gumperz and D. Hymes. New York: Holt, Rinehart and Winston.

Bishop, G. D. 1979. Perceived similarity in interracial attitudes and behaviors: The effects of beliefs and dialect style. *Journal of Applied Social Psychology* 9.5:446-465.

Brown, P. and S. Levinson. 1978. Universals in linguistic usage: Politeness phenomena. *Questions and Answers* ed. by E. Goody. Cambridge, MA: Cambridge University Press.

Cazden, C. 1988. *Classroom Discourse: The Language of Teaching and Learning.* Portsmouth, NH: Heinemann.

Cohen, A.D. and A.F. Beltramo (eds.) 1977. *El Lenguaje de los Chicanos: Regional and social characteristics of the language used by Mexican Americans.* Arlington, VA: Center for Applied Linguistics.

Duncan, S. 1972. Some signals and rules for taking speaking turns in conversations. *Journal of Personality and Social Psychology* 6.341-349.

Duran, R.P. 1981. *Latino Language and Communicative Behavior.* Norwood, NJ: Ablex Publishing Company.

Eisenstein, M. 1979. *The Development of Dialect Discrimination and Stereotyping in Adult Learners of English as a Second Language.* Unpublished Ph.D. Dissertation, CUNY, the Graduate Center, New York.

Eisenstein, M. 1989. *The Dynamic Interlanguage: Empirical Studies in Second Language Variation.* New York: Plenum.

Erickson, F. 1976. Gatekeeping interaction: A social selection process. *Anthropology and Public Interest: Fieldwork and Theory* ed. by P.R. Sanday. New York: Academic Press.

Erickson, F. 1979. Talking down: some cultural sources of miscommunication in interactional interviews. *Nonverbal Behavior: Application and Cultural Implications* ed. by A. Wolfgang. New York: Academic Press.

Erickson, F. and G. Mohatt. 1981. Cultural organization of participation structures in two classrooms of Indian students. *Doing the Ethnography of Schooling* ed. by G. Spindler. New York: Holt, Rinehart and Winston.

Fishman, J. 1972. *The Sociology of Language: An interdisciplinary social science approach to language in society.* Rowley, MA: Newbury House Publishers.

Gingras, R. 1971. An analysis of two Mexican American bilingual data. Los Alamitos, California: Southwest Regional Laboratory. Also ERIC document 110 206.

Goddard, D. 1977. Same setting, different norms: phone call beginnings in France and the United States. *Language and Society* 6.2:209-219.

Goldstein, L. M. 1987. Standard English: The only target for nonnative speakers of English? *TESOL Quarterly* 21.3:417-436.

Graham, J. 1980. *Cross-cultural Negotiation.* Unpublished Ph.D. dissertation. University of California, Berkeley.

Gumperz, J. 1977. Sociocultural knowledge in conversational inference. *Monograph Series on Languages and Linguistics* ed. by M. Saville Troike. Washington D.C.: Georgetown University Press.

Gumperz, J. 1978. The conversational analysis of interethnic communication. *Interethnic Communication* ed. by E.L. Ross. Southern Anthropological Society. University of George Press.

Gumperz, J. and D. Tannen 1979. Individual and social differences in language use. *Individual Differences in Language Ability and Language Behavior* ed. by C. Fillmore, D. Kemplar, and W. S. Wand. Washington: Anthropological Society of Washington.

Heath, S. B. 1983. *Ways with Words.* New York: Cambridge University Press.

Heath, S. B. 1986. Sociocultural contexts of language development. *Beyond Language: Social and Cultural Factors in Schooling Language Minority Students.* California State Department of Education. Sacramento, California: Evaluation, Dissemination and Assessment Center, California State University.

Hymes, D. 1962. The ethnography of speaking. *Anthropology and Human Behavior* ed. by T. Gladwin and W. C. Sturtevart. Washington: Anthropological Society of Washington.

Keenan, E.O. and B. Schieffelin 1977. Topic as a discourse notion: A study of topic in conversations of children and adults. *Subject and Topic* ed. by C. Li. New York: Academic Press.

Kellerman, E. 1979. Transfer and non-transfer: where we are now. *Studies in Second Language Acquisition* 2.1:37-58.

Labov, W. 1965. On the mechanism of linguistic change. *Georgetown University Series on Language and Linguistics* 18.91-114.

Labov, W. and D. Fanshel. 1979. *Therapeutic Discourse.* New York: Academic Press.

Macias, J. 1987. The hidden curriculum of Papago teachers: American Indian strategies for mitigating cultural discontinuity in early schooling. *Interpretative Ethnography at Home and Abroad* ed. by G. Spindler and L. Spindler. Hillsdale, NJ: Erlbaum.

McCurdy, L. 1980. *Talking to Foreigners: The role of rapport.* Unpublished Ph.D. dissertation. University of California, Berkeley.

Metcalf, A. 1970. *Chicano English. Language in Education, Theory and Practice, 21.* Arlington, VA: Center for Applied Linguistics.

Metcalf, A. 1974. The study of Chicano English. *International Journal of the Sociology of Language* 2.53-58.

Michaels, S. 1981. Sharing time: Children's narrative styles and differential access to literacy. *Language in Society.* 10.423-443.

Ogbu, J. U. and M. E. Matute-Bianchi. 1986. Sociocultural resources in instruction: A context-specific approach. *Beyond Language: Social and Cultural Factors in Schooling Language Minority Students.* California State Department of Education. Sacramento, California: Evaluation, Dissemination and Assessment Center, California State University.

Ortego, P. 1970. Some cultural implications of a Mexican-American border dialect of English. *Studies in Linguistics.* 21.77-82.

Peñalosa, F. 1980. *Chicano Sociolinguistics: A brief introduction.* Rowley, MA: Newbury House.

Philips, S. 1970. The acquisition of rules of appropriate usage. *Monograph Series on Languages and Linguistics* ed. by J. Atlatis. Washington D.C.: Georgetown University Press.

Philips, S. 1972. Participant structures and communicative competence: Warm Spring children in community and classroom. *Functions of Language in the Classroom* ed by C. Cazden, V. John and D. Hymes. New York: Teachers College Press.

Philips, S. 1983. *The Invisible Culture: Communication in Classroom and Community on the Warm*

Spring Indian Reservation. New York: Teachers College Press.
Richards, J. 1980. Conversation. *TESOL Quarterly* 14.4:413-432.
Romaine, S. 1984. *The Language of Children and Adolescents.* New York: Basil Blackwell.
Sacks, H., E. Schegloff, and G. Jefferson, 1974. A simplest systematics for the organization of turn-taking for conversation. *Language* 50.4:696-735.
Sato, C. 1981. Ethnic styles in classroom discourse. *On TESOL '81* ed. by M. Hines and W. Rutherford. Washington D.C.: TESOL.
Sato, C. 1989. A nonstandard approach to standard English. *TESOL Quarterly* 23.2:259-282.
Schegloff, E. 1982. Discourse as an interactional achievement: some uses of "uh huh" and other things that come between sentences. *Analyzing Discourse: Text and talk* ed. by D. Tannen. Georgetown University Round Table on Languages and Linguistics. Washington D.C.: Georgetown University Press.
Scollon, R. and S. Scollon, 1980. *Linguistic Convergence: An ethnography of speaking at Port Chipweyan, Alberta.* New York: Academic Press.
Scollon, R. T. and S. B. Scollon, 1981. *Narrative, Literacy and Face in Interethnic Communication.* Norwood, New Jersey: Ablex.
Selinker, L. 1969. The psychologically relevant data of second-language learning. In *The Psychology of Second Language Learning* ed. by P. Pimsleur and T. Quinn. Cambridge: Cambridge University Press.
Selinker, L. 1972. Interlanguage. *IRAL* 10.3:209-231.
Selinker, L. and J. T. Lamendella. 1981. Updating the interlanguage hypothesis. *Studies in Second Language Acquisition* 3.2:201-220.
Selinker, L., M. Swain, and G. Dumas. 1975. The interlanguage hypothesis extended to children. *Language Learning* 25.139-152.
Singh, R., J. Lele, and G. Martohardjono. 1988. Communication in a multilingual society: Some opportunities missed. *Language in Society* 17.43-59.
Spindler, G. and L. Spindler. 1987. *Interpretive Ethnography of Education: At Home and Abroad.* Hillsdale, NJ: Lawrence Erlbaum Associates.
Tannen, D. 1980. A comparative analysis of narrative strategies. *The Pear Stories* ed. by W. L. Chafe. Norwood, NJ: Ablex Publishing Company.
Tannen, D. 1979. *Processes and Consequences of Conversational Style.* Unpublished Ph. D. dissertation, University of California, Berkeley.
Tarone, E., U. Fraunfelder, and L. Selinker. 1976. Systematicity/variability and stability/instability in interlanguage systems. *Papers in Second Language Acquisition* ed. by H.D. Brown. Reprinted in Special Issue, *Language Learning* 4.93-134.
Terrell, T. 1978. A quantitative study of the merger of /a/ and /Σ/ in Southern California. *SWALLOW VI: Proceedings of the Sixth Southwest Area Language and Linguistics Workshop: The Bilingual in a Pluralistic Society* ed. by H.Key, G. McCullough and J. B. Sawyer. Long Beach,CA.
Thompson, R. M. 1974. Mexican American English: social correlates of English pronunciation. *American Speech* 50.18-24.
Trueba, H. 1989. *Raising Silent Voices.* New York: Harper and Row/Newbury House Publishers.
Weeks, T. 1983. Discourse, culture and interaction. *Second Language Learning* ed. by B. Robinette and J. Schachter. Ann Arbor: University of Michigan Press.
Weinreich, U. 1954. *Languages in Contact.* Mouton: The Hague.
Wolfson, N. 1981. Compliments in second language performance. *TESOL Quarterly* 15.3:117-124.
Wolfson, N. 1989. *Perspectives: Sociolinguistics and TESOL.* New York: Harper and Row/Newbury House Publishers.
Yngve, V. H. 1969. On getting a word in edgewise. *Papers from the Sixth Regional Meeting of the Chicago Linguistics Society.*

Zuengler, J. 1989. Performance variation in NS-NNS interactions: ethnograpghic difference, or discourse domain? *Variation in Second Language Acquisition: Discourse and Pragmatics* ed. by S. Gass, C. Madden, D. Preston, and L. Selinker. Clevedon, Avon: D.C.: Georgetown University Press.

APPENDIX A

Measures

The measures used in this analysis are listed under the hypothesis to which they pertain. Each measure was applied to all of the data from the three speech corpora (Spanish, English and interethnic). The speech of each participant in the dyadic conversation, as well as the conversation as a whole (the speech of both participants combined) was analyzed. Definitions are listed alphabetically below the measures.

Measures

Hypothesis 1: Communication Difficulties

1. Number of abrupt topic shifts in proportion to number of utterances
2. Number of interruptions in proportion to number of utterances

Hypothesis 2: Discourse Accent

1. List of topic types discussed
2. Order in which topic types occur
3. Number of exchanged back channel cues in proportion to number of utterances
4. Number of repetitions used as back channel cues in proportion to number of utterances
5. Number of consecutive back channel cues in proportion to number of utterances
6. Number of pause fillers preceding responses to questions in proportion to number of utterances
7. Number of consecutive pause fillers in proportion to number of utterances

Definitions

Abrupt Topic Shifts. Changes in discourse topic which are: (1) unrelated to previous discourse history; and (2) not marked with any special metalinguistic warning (such as "not to change the subject, but...").

Back Channel Cues. Verbal listener response signals consisting of: (1) short expressions (such as "sí" and "muy bien" in Spanish and "yeah" and "uhuh" in English); (2) short tag questions (for instance, " de veras?" and "sí" in Spanish and "really" and "yeah" in English); and (3) complete and partial repetition of the speaker's previous utterance.

Consecutive Back Channel Cues. Two or more back channel cues which follow consecutively in the same turn. (Examples include: "Sí Entiendo. Muy interesante" in Spanish, and "Yeah. Uhuh Real interesting" in English.)

Consecutive Pause Fillers. Two or more pause fillers which follow consecutively in the same turn. (Examples include: "Pues digo este" in Spanish and "Uhm ya know well anyway" in English.)

Exchanged Back Channel Cues. Listener response cues exchanged between speaker and hearer.

Interruptions. Violations of a speaker's turn of talk consisting of a more than one syllable overlap and excluding listener back channel cues overlaps.

Pause Fillers. Verbal expressions such as "pues", "este" and "digo" in Spanish and "well", "uhm" and "ya know" in English which generally function to maintain one's turn in conversation while formulating one's thoughts.

Pause Fillers Preceding Responses to Questions. Pause fillers which directly precede responses to

questions.
Repetitions to Back Channel Cues. Listener response signals consisting of complete and partial repetition of a speaker's previous utterance.
Topic. "A proposition (or set of propositions) expressing a concern (or a set of concerns) the speaker is addressing" (Keenan and Schieffelin 1977, p. 343).
Utterances. Units isolated by sentence contour, pauses and/or the expression of a "complete thought", including abbreviated utterances (which contain deleted elements) but excluding back channel cues, pause fillers, one word replies (such as "yes" and "no") and self-repetition.

APPENDIX B

Transcription Symbols

(0.4)	pause, four tenths of a second
:	sound is held (ye:::s)
,	slight rise in intonation
?	rising, question intonation
[	onset of overlap or interruption
]	end of overlap or interruption
X	repetition
[ ]	indistinguishable word, transcriber's comment
•h	inbreath
h	outbreath
CAPS	emphasis
--	speed up in rate of speech written above word or words
-	cutoff, self-repetition
=	latching, one sound seems tied to the next
.	falling intonation contour indicating end of utterance

Abbreviations

T = teacher
S = student
Ss = several students
Ss (in unison) = all students
V = Videodisc recorder

APPENDIX C

Inter-Rater Reliability Coefficients

In order to establish inter-rater reliability, one speech sample from each of the three speech corpora was randomly drawn and rated independently by two judges. The correlation coefficients listed below represent the percentage of agreement between the raters.

Measures	Percentage of Agreement
Abrupt Topic Shifts	.75

Interruptions	.96
Topic Types	.54
Order in which topics occur	.86
Exchanged back channel cues	1.00
Repetition used as back channel cues	.92
Consecutive back channel cues	1.00
Pause fillers preceding questions	.97
Consecutive pause fillers	.95

The Cognitive Function Of Case Marking In German As A Native And A Foreign Language*

Peter Jordens

The Nominative in German and The Subject Function in Dutch and English

The functioning of the grammatical subject, an important characteristic on the basis of which languages can be categorized typologically, is a matter of much discussion both among psycholinguists and linguists of differing theoretical backgrounds. In Keenan (1976), the subject is defined as a *cluster of properties* out of which languages may realise a larger or smaller subset. This is illustrated in Keenan's "Subject Properties List." Furthermore, with respect to particular languages, Schachter (1977) argues that the subject function is determined by properties that are constant for subjects across sentence types. The properties that are of relevance are *role prominence* and *referential prominence*.

Regarding the function of "*role prominence*", Schachter (1977:283) states that it "is less the particular objective role an individual has played in an event than it is the subjective viewpoint of the speaker with regard to the importance, or interest, of this role and this individual." Thus a role-prominent NP refers to "the individual whose role in an event the speaker views as central" (Schachter 1977:296). The term "*referential prominence*," on the other hand, indicates that "the speaker assumes that the hearer knows the intended referent" (Schachter 1977:282). Referential prominence, therefore, is identical to what is usually referred to as "topicality."

For languages such as English and Dutch, role prominence and referential prominence generally co-occur. Hence, a grammatical subject in these languages indicates both the speaker's focus of interest as well as topicality. The subject function in German, on the other hand, differs from the use of the subject in English and Dutch. In German, the subject, i.e. the nominative, primarily indicates role prominence. The feature of referential prominence (topicality) is less inherently connected with the nominative. Therefore, it is possible in German to use sentences as in (1) with an accusative NP in sentence-initial, i.e. referentially prominent position (see also Pape-Müller 1980:124f and 236).

(1) *Die Sterne überstrahlt der Mond*
the stars (ACC) outshines the moon (NOM)
'The moon outshines the stars'

Though the use of such sentences seems to be restricted (Weigand 1978: 170ff.), they have the same "normal," i.e. sentence-final, intonation as sentences in which the nominative and the accusative are not inverted.

From the perspective of the subject as the entity that has role prominence in the first place, the functioning of the passive can also be understood. It is the function of the passive sentence to signal that the agent is backgrounded or, as Schachter (1977:300) phrases it, "it is THE major function of this construction to assign role prominence to the patient at the expense of the agent."

What exactly is meant by "role prominence?" For an NP there are, I think, two conditions that must be met in order to have role-prominent function. Firstly, the NP must be "in perspective," and secondly, among the participants that are "in perspective," it has to rank highest with respect to its "degree of contribution" to the event. The term "in perspective" is used here in the sense Fillmore (1977) uses it. Fillmore discriminates between, on the one hand, parts of the message that are "in perspective" and, on the other hand, parts of the message that are "out of perspective." "In perspective" are those constituents that are "specifically required by a particular type of situation" (Fillmore 1977:74), "out of perspective" are those constituents that are not necessarily required in order to describe a specific state of affairs. The term "degree of contribution" is used here as it is used by Zubin (1975). It designates "the degree to which a participant is 'agent-like' in an event" (Zubin 1975:174f). A sentence such as (2) is used by Zubin in order to illustrate how this notion 'degree of contribution' serves as a case-marking determining variable.

(2) *Der Frost hat dem Bauern die Kartoffeln verdorben*
the frost (NOM) has the farmer (DAT) the potatoes (ACC) ruined
'The frost ruined the potatoes on the farmer'

The reason why *Frost* (i.e. an "instrument") has the nominative, whereas *Bauer* (i.e. an "experiencer") has the dative, is to be seen as due to "the value relations among the participants - their potency relative to each other", i.e. "the frost is clearly more potent than the farmer in ruining the potatoes" (Zubin 1975:176).[1] Another example is given in (3).

(3) *Der Bauer hat die Brieftasche verloren*
the farmer (NOM) has the wallet (ACC) lost
'The farmer lost his wallet'

Here, the nominative NP *Der Bauer* "the farmer" is an experiencer but "still higher in potency than the only other participant - the wallet". With examples like (2) and (3) Zubin demonstrates that "the case forms themselves convey only the relative ranking of the participants with respect to their contribution to the event" (Zubin 1975:176).

As mentioned before, NPs ranking highest according to their degree of contribution can be placed 'out of perspective'. If this is the case, a specific sentence form such as a passive has to be chosen. Psycholinguistic evidence for the fact that the function of the active vs. the passive voice has to be described in terms of the in-perspective vs. out-of-perspective status of the agent can be found in experimental studies by Anisfeld & Klenbort (1973), Hupet & Le Bouedec (1975), Johnson-Laird (1968), MacWhinney & Bates (1978), Tannenbaum & Williams (1968), Turner & Rommetveit (1968). Linguistic evidence can be found in studies by Comrie (1977) and Weisgerber (1963). Psycholinguistic evidence for 'relative degree of contribution' as a factor determining the use of the nominative or the assignment of subject function can be found in Clark & Begun (1971) and Clark (1973). Linguistic evidence is given by Zubin (1975, 1977, 1979).[2]

Role prominence in English and Dutch is formally indicated by word order properties, i.e. an NP that functions role-prominently in English or Dutch occurs in sentence-initial position. Since sentence-initial position also signals referential prominence (i.e. topicality), it can be understood why role and referential prominence are strongly connected in both English and Dutch.[3] In German, however, role prominence is formally indicated with a particular case morpheme, i.e. the nominative form. Therefore, in order to be identified as a role-prominent entity, an NP in German does not have to occur in sentence-initial position. This explains why in German, role and referential prominence are not that strongly interlinked, as is the case in English and Dutch.

For NPs to have role-prominent function, it has been argued that two conditions must be met. Role-prominent NPs must be 'in perspective' and 'highest on a scale of relative contribution to the event'. A cognitive explanation for these criteria can be found in Ertel (1977). In several experiments, Ertel (1977) showed that the subject selection process is determined by an egocentric bias. That is, according to Ertel (1977:147), the selection of the subject in German is based on "symptoms of relative closeness between the subject element and the speaker's ego." This principle of "ego-nearness" can explain both why degree of agentivity

determines subject selection and why in specific circumstances the agent is placed out of perspective. Degree of agentivity is the cognitive basis for subject selection because agentivity is a human characteristic par excellence. If, however, for particular speaker-related reasons, the agent is not closest to the speaker's ego, it will not be used with subject function. This can be illustrated as follows. If, for example, a journalist reports on a soccer match in which one player fouls the other, in a description of this event, the agent of this action normally becomes the subject of the sentence. However, the journalist who is more involved with the team whose player is the patient of the action, will background the agent such that the patient can have subject function (see Jordens 1983:154f and Ertel 1974, 1977).

Summarizing, we can say that two factors, on the one hand the more objective, perceptually-based degree in which an entity is agentivily involved in an event and, on the other, the more subjective factor of a speaker's actual personal involvement are both directed towards the same goal: they differentiate cognitively between entities that are more or less ego-near.[4] On the basis of this psychological notion of "ego-nearness," there is one entity "within the phenomenal field of the speaker, which includes an ego" (Ertel 1977:140) that is going to be selected as the subject. One of the nominals is thereby given a special cognitive and linguistic status relative to the other possible nominal entities. It is precisely this status that is referred to by means of the term "role prominence" (Schachter 1977). Formally, this role-prominent functioning can be expressed through a specific word-order property (i.e. sentence-initial position in English an Dutch) and/or through a morphological device such as a specific case morpheme (e.g. the nominative case form in German).

In section 2, the cognitive basis underlying case marking in German as a native language (L1) will be validated with respect to NP + past-participle constructions that have no finite verb, as well as to constructions that do not have a verb form at all. Examples of both construction types are given in (4).

(4) *Den Sieg verschenkt*
the victory (ACC) away-given
'The victory given away'

Der Schütze getötet
the shooter (NOM) killed
'The shooter killed'

Den Sieg in der Tasche
the victory (ACC) in the pocket
'The victory in the pocket'

Der Hamburger SV fest im Griff von Hajduk Split
the Hamburg SV (NOM) firmly in the grip of Hajduk Split
'The Hamburg SV firmly in the grip of Hajduk Split'.

Furthermore, in section 3, I will investigate whether the linguistic properties which constitute the subject and the object function in Dutch and English and which differ from those underlying the subject and the object function in German affect case marking in the L2 German of Dutch and English learners in a non-native way.

The Cognitive Basis Underlying The Use of Nominative and Accusative Case Forms in Incomplete Sentences in L1 German

Qualitative analysis

In order to verify Ertel's (1974, 1977) research findings on the principles underlying subject selection in German, the use of the nominative and the accusative in a corpus of 201 incomplete sentences, i.e. sentences without a finite verb, was analysed.

Incomplete sentences such as NP constructions with and without a past participle usually occur in headlines and captions. Examples are given in (5).

(5)

(a) *Neuer Bischof für Berlin ernannt*
new bishop (NOM) for Berlin appointed
'New bishop for Berlin appointed'

(b) *Weiterer Jupitermond entdeckt*
another Jupitermoon (NOM) discovered
'Another Jupiter moon discovered'

(c) *Für Sadat und Begin kein Aufbruch nach Assuan*
for Sadat and Begin no departure (NOM) for Assuan
'For Sadat and Begin no departure for Assuan'

(d) *Den Vater verteidigt, die Mutter vergöttert*
the father (ACC) defended, the mother worshipped
'His father defended, his mother worshipped'

(e) *Den Traum vom Aufstieg ausgeträumt*
the dream (ACC) of promotion dreamed to an end'
'The dream of promotion dreamed to an end'

(f) *Seit gestern keinen Schluck mehr!*
since yesterday no swallow (ACC) more
'Since yesterday, not a single swallow!'

In these constructions, which are used without any context, the NPs occur with either a nominative or an accusative form. Both the accusative and the nominative NPs, however, either have the same semantic (i.e. patient) function as in (5a, 5b, 5d, 5e) or no semantic function, as in (5c) and (5f). Since there is no finite verb in either of these constructions, the syntactic function of the NPs cannot be determined.

One could argue, though, that the use of case forms in these constructions should be explained with respect to an underlying *complete* sentence. The incomplete constructions are then to be seen as the result of a particular deletion. However, this "explanation" does not answer the question *why* in some of these underlying sentences the active voice and in others the passive voice must be chosen. Since the choice between the active and passive voice depends on which entity the speaker attributes subject function to, subject selection - and, therefore, case marking - determines which voice has to be used, not vice versa. This means that a speaker does not have to generate a complete sentence in order to be able to choose the correct case forms in incomplete sentences.

As a further argument for this, one might consider the use of the nominative and the accusative in the following examples. The first example comes from a cartoon in which two women discuss their drinking problem. At a certain point one of them says:

(6) *Seit gestern keinen Schluck mehr!*
since yesterday no swallow (ACC) more
'Since yesterday, not a single swallow!'

The other person agrees saying about herself:

(7) *Seit zwei Tagen kein Tropfen mehr!*
since two days no drop (NOM) more
'For two days now, not a single drop!'

It seems clear that the use of the accusative in (6) and the nominative in (7) cannot be related to the syntactic function of the NPs within an assumed underlying complete sentence. There is no way in which one could argue that *keinen Schluck* in (6) can only be seen in the context of an active sentence, whereas *kein Tropfen* in (7) should be part of a passive sentence. On the other hand, however, the noun *Schluck* implies a person performing the action that it refers to, which is not the case for the noun *Tropfen*. Therefore, the noun *Schluck*, being nonrole-prominent relative to the implied person, must be used with the accusative, whereas the noun *Tropfen*, not implying a role-prominent entity and accordingly being role-prominent itself, must be used with a nominative.

For the same reasons, the nominative is used in the heading of an advertisement in which possible candidates are asked to apply for a particular job, such as in (8).

(8) *Promovierter Arzt gesucht*
promoted medical-doctor (NOM) wanted
'Medical doctor with Ph.D. wanted'

The medical doctors who are requested to apply are not seen as being personally related to someone else. Therefore, according to the rules for case forms in incomplete sentences, the noun has to be used with the nominative form. This, of course, does not mean that whenever this noun phrase is going to be used in a *sentence*, it has to occur in the nominative. The advertisement from which this specific example is taken constitutes evidence for this. In the text it says:

(9) *Wir suchen einen promovierten Arzt*
we look-for a promoted medical doctor (ACC)
'We are looking for a medical doctor with a Ph. D.'

Hence, the use of either the nominative or the accusative in headline-type constructions such as (5) through (8) is based on the relation between the entities that play a role conceptually, both through explicit and implicit reference, and not on the syntactic structure of a sentence that one might think of as a possible expansion.

From our hypothesis, according to which the choice between the nominative and the accusative in incomplete sentences should be determined by the factor of ego-nearness, it follows that in past-participle constructions an accusative NP can only be used if the NP *implies* an entity that is closer to the speaker's ego. In other words, if the case form that is used explicitly expresses nonego-nearness, it is

implicitly stated that there is another entity to which the speaker feels (more) closely related. A comparison of the examples under C (in which nominative forms are used) with the examples under D (that have accusative morphology) should illustrate this (the examples under C and D - two of six categories that are to be discriminated in 2.2 below - are taken from my corpus of headline-type constructions).

C: NP(NOM), DTL (= determinerless)
Animate:

Neuer Bischof für Berlin ernannt
'New bishop for Berlin appointed'
Algerischer Diplomat in Beirut ermordet
'Algerian diplomat killed in Beirut'
Zehnjähriger ermordet
'Ten year old boy killed'

Inanimate:

Langfristiger Plan vorgelegt
'Long term plan presented'
Internationaler Kongreß für Zytologie eröffnet
'International conference of cytology opened'
Weiterer Jupitermond entdeckt
'Another moon of Jupiter discovered'

D: NP(ACC), DF (= definite)
Animate:

Den Vater verteidigt, die Mutter vergöttert
'His father defended, his mother worshipped'
*Den Zimmerkollegen durch Brandstiftung getötet? 58-jä*hriger *Schlosser unter Mordanklage vor dem Schwurgericht*
'His roommate killed through arson? 58 year old locksmith before the jury under arrest of murder'
Den Nachbarn erschossen
'His neighbour shot'

Inanimate:

Den Blick fest nach oben gerichtet...
'The glance firmly directed upwards'
Den 2:0-Vorsprung noch verspielt
'The 2:0 lead given away'
Den Sperrmüll noch nicht in den Griff bekommen
'The bulky refuse not yet in the grip'

The examples presented under D have one property in common which does not occur in C. This property is the existence of a relationship between the NP(ACC) - or any other NP in the same construction, i.e. *Griff* in the last example under D - and a non-expressed person functioning as the agent of the past-participle construction. This relationship between the NP expressed and a person not explicitly mentioned is established on a conceptual level, i.e. it is inferred from the meaning and/or the context of the NP expressed. An implied relationship can exist between a property and a person that this property belongs to, between a person and an institution that this person is a member of, or between two individuals who are somehow related to each other. Therefore, NP(ACC) constructions can refer to:

(a) part of a person's body (e.g. *Kopf* 'head'), someone's property, achievement or activity (e.g. *Schatten* 'shadow,' *Ruf* 'name,' *Besitz* 'property;' *Vorsprung* 'lead,' *Sieg* 'victory;' *Tod* 'death,' *Traum* 'dream,' *Blick* 'glance,' *Griff* 'grip');
(b) a social group that the implied person is a member of (e.g. *Staat* 'country');
(c) a human being that the implied person is personally or functionally related to (e.g. *Vater* 'father,' *Kollege* 'colleague,' *Nachbar* 'neighbour,' *Familientyrann* 'tyrant of the family').

In these types of implied relationship the NP expressed somehow "belongs to" another entity. This precisely specifies the situation in English and Dutch in which a possessive pronoun would or could be used. Hence, in incomplete sentences in English and Dutch such as *His leg broken*, *Zijn been gebroken*, a possessive pronoun is used rather than the definite article for exactly the same reasons why in German the accusative form is used instead of the nominative.

From the examples mentioned above, it might be concluded that the use of either the accusative or the nominative should be determined by the semantic content of the particular lexical item. For example, a noun such as *Nachbar*

'neighbour' cannot be used without the implication of there being one or more individuals for whom the person that it refers to constitutes the neighbour. That is, one is always a neighbour of someone else. On the other hand, a noun such as *Riese* 'giant' does *not* have an implication of there being one or more individuals for whom the person that it refers to constitutes the giant. That is, a giant is never a giant of somebody else. In many cases, however, this inference of a personally related individual or group of individuals is not determined by the semantics of the NP expressed, but by the context in which the NP is used or by the context that is presupposed. Compare, for example, the headlines in (10).

(10) *Angriff auf cubanische Tanker (...). Ein Kapitän getötet*
attack on Cuban tanker. a captain (NOM) killed
'Attack on Cuban tanker. A captain killed'

Meuterei auf cubanischen Tankern. Einen Kapitän getötet
mutiny on cuban tankers. a captain (ACC) killed
'Mutiny on Cuban tankers. A captain killed'

In the first case, a captain has been killed in an attack (*Angriff*) by people who are to be seen as not related to the victim, whereas in the second case the meaning of the word 'mutiny' (*Meuterei*) indicates that a captain has been killed by members of his own crew.

Compare also the examples in (11).

(11) *Neuer Bischof ernannt*
new bishop (NOM) appointed
'New bishop appointed'

Neuen Bischof abgesetzt
new bishop (ACC) removed
'New bishop removed'

In the first case a bishop has been appointed by an authority which does not have an implied relation to the bishop. In the second example, it is implied that the bishop has been removed by a person or by people to whom he/she has a personal relationship in the sense that they "belong to each other" as, for example, colleagues or members of his/her diocese.

The examples of past-participle constructions with an NP(ACC), such as in (5d), (5e) and category D, indicate that the agent, though not explicitly expressed,

functions as a participant which must be *in perspective*. Evidence that implied agents have to be in perspective can be inferred from the fact sentences such as (12) are awkward.

(12) *Der Kopf wurde von mir geschüttelt*
my head (NOM) was by me shaken
'My head was shaken by me'

A word like *Kopf* ('head'), implying and thereby foregrounding a person it belongs to, cannot simultaneously be used as if this person played a relatively unimportant role, such that it could be mentioned in the *von*-phrase of a passive sentence. If, however, the relatively unusual event occurred in which the head did not belong to the person who is the agent of the action, the agent could be placed *out of perspective*, i.e. in this case it could occur in the *von*-phrase of a passive sentence. Thus, if there is a situation in which a sentence such as (12) is appropriate, it has to be a situation in which the head does not belong to the agent. In this situation an NP(NOM) + past-participle construction such as (13) would also be possible for the same reasons.

(13) *Der Kopf geschüttelt*
his head (NOM) shaken
'His head shaken'

Case marking in constructions *without* a verbal constituent should be determined by the same principles as in NP + past-participle constructions. This is because the rules for case marking in German depend on the relation between the cognizing ego and the entities that are conceptually involved. The question of whether or not there is a personal relationship to be inferred between the NP expressed and an implied person is, therefore, equally relevant for NPs in NP + past-participle and verbless-NP constructions. Since this relation is established independently of the predicate, a verbless NP referring to a body part, an achievement, or a property of a person should have the accusative form, provided it is not governed by a preposition. The verbless NP constructions in our data can be seen as evidence for this. Examples are given in (14).

(14) *Den Finger am Abzug*
the finger (ACC) on-the trigger
'The finger on the trigger'

Den Sieg in der Tasche
the victory (ACC) in the pocket
'The victory in the pocket'

Seit gestern keinen Schluck mehr!
since yesterday no swallow (ACC) more
'Since yesterday, not a single swallow!'

So einen Blick als wir weggingen!
such a look (ACC) as we left
'Such a look as we left!'

As opposed to NPs in NP + past-participle constructions, verbless NPs usually do not have a semantic function. This is due to the fact that a verbless NP is not an argument of a predicate and, therefore, has neither a semantic nor a syntactic function. Since in this type of construction the use of a nominative or an accusative NP cannot be determined by either its semantic or its syntactic functioning, this is the best evidence that case marking in German is determined by the relation between entities that play a role conceptually. As has been mentioned before, the entity that is closest to the ego will be marked with a nominative if it is expressed, whereas the entity that is less ego-near always has the accusative, independently of whether the entity closest to the ego is expressed or not.

With respect to the relation between active and passive sentences, it has been stated that the function of the passive construction is to indicate that the agent is placed *out of perspective*. A highly contributory entity which is placed out of perspective does not only occur in complete sentences such as passive sentences. It can also appear in verbless constructions. Compare for example (15) and (16).

(15) *Den Hamburger SV fest im Griff*
the Hamburg SV (ACC) firmly in-the grip
'The Hamburg SV firmly in the grip'

(16) *Der Hamburger SV fest im Griff von Hajduk Split*
the Hamburg SV (NOM) firmly in-the grip of Hajduk Split
'The Hamburg SV firmly in the grip of Hajduk Split'

The noun *Griff* ('grip') in (15) refers to an action performed by one or more human beings. From further contextual information, e.g. '*der Hamburger SV*' being a soccer team, it can be inferred that the implied agent should be the opposing soccer team. This agent, which contributes most to the bringing about of

the event, has not been placed *out of perspective*. Therefore, the NP expressed, which has a lesser degree of contribution relative to the implied agent, has to be marked with the accusative form: *Den Hamburger SV.* In the second example, however, the agent is expressed as part of the prepositional *von*-phrase. This means that it is placed *out of perspective* just as is the case in *von*-phrases of passive sentences. Therefore, the object of the action in (16) has to be marked with the nominative form: *Der Hamburger SV.*

To summarize, from our observations on the use of case forms in German headline-type constructions it appears that rather than the syntactic or semantic functioning it is the relation between the entities that play a role conceptually and the cognizing ego which determines the use of either the nominative or the accusative.

Quantitative analysis

The results of a quantitative analysis of the use of nominative and accusative forms in NP + past-participle constructions are given in Figure 1 and Figure 2.

In Figure 1 a sample of 201 headlines and captions collected from German newspapers is categorized as to whether the NP occurs with a nominative (NOM) or an accusative (ACC) case form, whether the NP contains a determiner that is definite (DF) or indefinite (IDF), or whether the NP is determinerless (DTL):

Category A = NP(NOM), DF	Category D = NP(ACC), DF
Category B = NP(NOM), IDF	Category E = NP(ACC), IDF
Category C = NP(NOM), DTL	Category F = NP(ACC), DTL

Furthermore, within each of these six categories the NPs are categorized as to either animate or inanimate.

From the frequencies as they are presented in Figure 1, it clearly appears that the NP(ACC)s are generally definite, whereas the NP(NOM)s usually occur without a determiner. NP(ACC)s are usually definite as result of the implied relationship to a person who is not expressed. With regard to this implied person, the NP(ACC)s are assumed to be identifiable and therefore definite. The NP(NOM)s are neither explicitly nor implicitly used in relation to another entity that they might belong to. They refer to specific entities, which, as they occur in headlines, convey information that is usually supposed to be new. This means, on the one hand, that the definite article would be inappropriate, since it indicates that the author presupposes the reader to be able to identify the referent (s)he has in mind, and that on the other the indefinite article, usually referring to a non-specific entity, is less appropriate as a determiner. Indefinite NPs referring to a specific entity as in *Ein Kapitän wurde getötet* ('A captain was killed') establish marked sentence types. Through the possibility which is provided in headline-type

constructions to use determinerless NPs with reference to a specific entity, this marked use of the indefinite NP can be avoided.

Figure 1 Frequency of nominative and accusative NPs in NP + past-participle constructions (DF = definite, IDF = indefinite, DTL = determinerless, □ = animate, ▨ = inanimate)

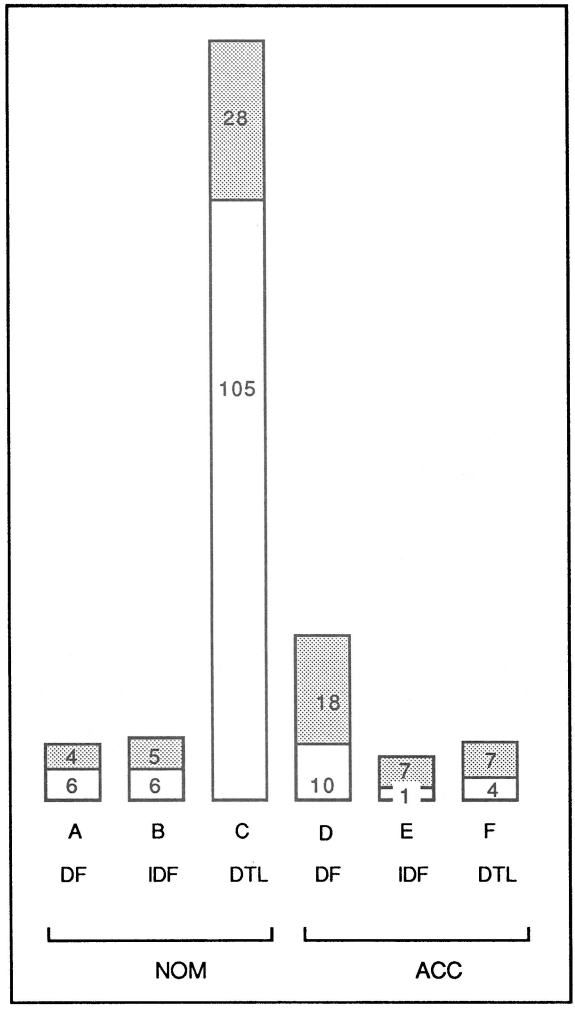


Figure 2 Nominative and accusative NPs in NP + past-participle constructions as a function of animacy.

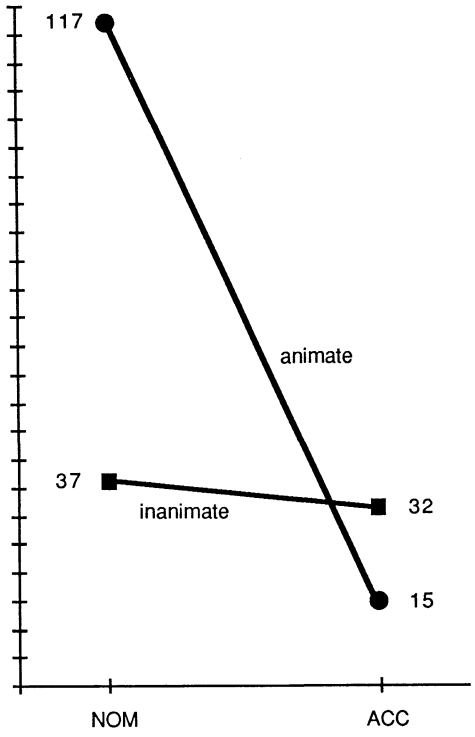


Figure 2 shows that nominative NPs generally refer to entities that are animate, whereas accusative NPs are mainly used for entities that are inanimate. This is in agreement with our hypothesis, according to which an entity that is in perspective has to be marked with a nominative if its contribution to the event is relatively great, whereas it has to be marked with an accusative if its contribution to the event is relatively small. Entities with a high degree of contribution usually refer to human beings, whereas entities with a low degree of contribution are usually inanimate objects. There are, however, systematic exceptions to this tendency. As has been mentioned above, nouns are used with an accusative if they refer to human beings with an implied personal relationship such as *Vater* ('father'), *Kollege* ('colleague'), *Nachbar* ('neighbour'), *Familientyrann* ('tyrant of the family').

Hypotheses on interlanguage case marking in headline-type constructions

The status of the grammatical subject is prominent in both Dutch and English. In these two languages and in German as well, subject selection is determined by the principle of ego-nearness. Although it can safely be assumed that for *simple transitive* sentences intermediate and advanced learners of German will correctly use the subject with a nominative and the object with an accusative form, most Dutch and English learners of German, even the more advanced, will be unfamiliar with the use of case endings in *incomplete sentences*. Therefore, I hypothesize that native speakers of Dutch and English will use L2 German case morphology in these incomplete sentences based on their L1-intuitions. If this is true, we can predict that case *errors* will be caused by the functional difference between the subject and the object in L1 and L2. This functional difference is due to the fact that both in Dutch and English, as opposed to German, the subject is strongly connected with sentence-initial position, while the object is strongly connected with sentence-final position. Since sentence-initial position is discourse--functionally related to referential prominence or topicality, the topic function constitutes an inherent feature of the subject both in Dutch and in English (see Schachter 1977). Similarly, sentence-final position is related to non-referential prominence which means that in Dutch and English the focus function is an inherent feature of the object. On the basis of these differences, it can be hypothesized that formal features such as presence or absence of definiteness, which are interpreted in Dutch and English as connected with either topic or focus function, will also play a role in the identification of an NP in German as either subject or object. Hence, if Dutch and English learners of German use the nominative and accusative case forms according to their L1 intuitions on subject and object function, their judgments will be determined both by the factor of relative closeness to the speaker's ego *and* topicality.

Method

In order to test our hypotheses, we carried out an experiment in which both Dutch (intermediate and advanced) university students and American (beginning) university students and (advanced) teachers took part. The group of intermediate Dutch learners of German consisted of 37 first year university students and the group of advanced Dutch learners of German consisted of 36 third, fourth and fifth year university students. The group of beginning American students consisted of 28 university students and the group of advanced American learners of German (mostly teachers) consisted of 17 subjects.

The subjects were asked to circle either the nominative or the accusative form in 72 examples of mostly original German headlines and captions. The test

items were given on 6 forms that were presented in random order. Among the 72 items there were 24 in which the NP is ego-near since it is the only entity that is *in perspective* (see Appendix: 1.1, 1.2, 1.3). There are also 24 items in which the NP is nonego-near, since it causes the inference of a (related) person which is closer to the speaker's ego (see Appendix: 2.1, 2.2, 2.3). Both main categories were divided into three subcategories: items with determinerless NPs (DTL), items with definite NPs (DF) and items with indefinite NPs (IDF). On the basis of these attributes the following 6 categories can be distinguished.

In 24 items the NP is ego-near [-IMPL PERSON]. It does not imply an entity (a person) that is closer to the speaker's ego. These NPs are definite (DF), indefinite (IDF) or determinerless (DTL).

1.1 Category A (10 items) [-IMPL PERSON, DF], e.g.:

Der/Den frühere(n) Senator Dahrendorf rehabilitiert
('The former Senator Dahrendorf rehabilitated')
Der/Den Hamburger SV fest im Griff von Hajduk Split
('The Hamburg SV firmly in the grip of Hajduk Split')

1.2 Category B (6 items) [-IMPL PERSON, IDF], e.g.:

Ein/Einen Polizist(en) erschossen
('A policeman shot')
Kein/Keinen Tropfen mehr!
('Not a single drop!')

1.3 Category C (8 items) [-IMPL PERSON, DTL], e.g.:

Schwedischer/-en Konsul in Stettin ausgewiesen
('Swedish consul in Stettin expelled')
Entscheidender/-en Schritt zur Rüstungsbegrenzung erwartet
('Decisive step towards arms limitation expected')

In 24 items the NP is nonego-near [+IMPL PERSON]. It implies an entity (a person) that is closer to the speaker's ego. These NPs are also definite (DF), indefinite (IDF) or determinerless (DTL):

2.1 Category D (9 items) [+IMPL PERSON, DF], e.g.:

Der/Den Nachbarn erschossen
('The/his neighbour shot dead')
Der/Den Blick fest nach oben gerichtet
('The/their glance firmly directed upwards')

2.2 Category E (9 items) [+IMPL PERSON, IDF], e.g.:

Ein/Einen Freund verraten
('A friend betrayed')
Kein/Keinen Kuß?
('No kiss?')
Ein/Einen Sieg aus Händen gegeben
('A victory given away')

2.3 Category F (6 items) [+IMPL PERSON, DTL], e.g.:

Zerfetzter/-en Strohhut in den Händen
('Tattered straw hat in his hands')
Aufregender/-en Gedanke(n) im Sinn
('Exciting thought in his mind')

Results

For the four groups of subjects an analysis of variance was carried out in order to see whether the presence or absence of a cognitively implied (i.e. personally related), ego-near entity (±IMPL PERSON), as well as the determiner (DET) variables definite (DF), indefinite (IDF) and determinerless (DTL) might have a particular influence on the choice of either the accusative or the nominative case form in L2 German.

Interlanguage case marking in Dutch learners of German. For the 37 intermediate and 36 advanced Dutch learners of German the results of an analysis of variance with repeated measures are presented in Table 1 and Table 2. In both instances the main effects (IMPL PERSON with two variables and DET with three variables) and the interaction are significant at $< .01$ level.

Table 1: Analysis of variance with repeated measures (two within factors). Grammaticality judgements by 37 intermediate Dutch learners of German in NP constructions with nominative/accusative morphology

Source of variance	SS	df	MS	F
IMPLIED PERSON (A): with vs. without	46065.59	1	46065.59	122.60*
error	13527.09	36	375.75	
DET (B): DF, IDF, DTL	27767.34	2	13883.67	32.41*
error	30847.71	72	428.44	
AB	5960.39	2	2980.19	9.59*
error	22379.05	72	310.82	

* $p < .01$

Table 2: Analysis of variance with repeated measures (two within factors). Grammaticality judgements by 36 advanced Dutch learners of German in NP constructions with nominative/accusative morphology

Source of variance	SS	df	MS	F
IMPLIED PERSON (A): with vs. without	58098.63	1	58098.63	160.39*
error	12678.24	35	362.24	
DET (B): DF, IDF, DTL	39702.88	2	19851.44	38.87*
error	35749.32	70	510.70	
AB	22304.20	2	11152.10	47.38*
error	16475.91	70	235.37	

* $p < .01$

In Tables 3 and 4 the mean percentages of accusative forms that have been regarded as correct are given for both intermediate and advanced Dutch learners of German.

Table 3: Means of accusatives (%) in NP constructions regarded as correct by 37 intermediate Dutch learners of German

	DF	IDF	DTL
- IMPLIED PERSON	27.6	51.3	15.9
+IMPLIED PERSON	67.6	66.4	47.3

Table 4: Means of accusatives (%) in NP constructions regarded as correct by 36 advanced Dutch learners of German

	DF	IDF	DTL
- IMPLIED PERSON	20.8	61.6	14.9
+IMPLIED PERSON	77.8	68.8	49.1

The data of Tables 3 and 4 are represented graphically in Figures 3 and 4.

Figure 3 Accusatives (%) in NP constructions regarded as correct by 37 *intermediate Dutch* learners of German. Interaction IMPLIED PERSON * DET.

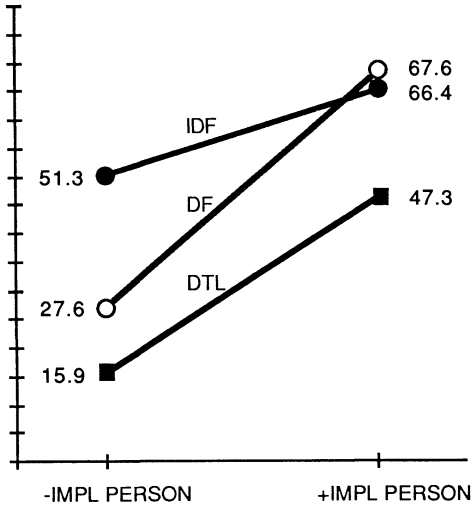
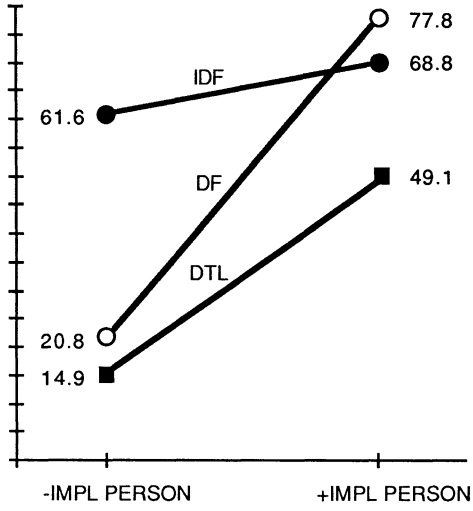


Figure 4 Accusatives (%) in NP constructions regarded as correct by 36 *advanced Dutch* learners of German. Interaction IMPLIED PERSON * DET.



These results first of all show that the absence or presence of a cognitively implied (i.e. personally related), ego-near entity affects the choice between either a nominative or an accusative case form in L2 German. NPs without a cognitively implied, ego-near entity [-IMPL PERSON] are generally marked with a nominative, whereas NPs with a cognitively implied, ego-near entity [+IMPL PERSON] are generally marked with an accusative. In the items of Category A, B and C, the NPs are marked with a *nominative* in 68.4 % (intermediate students) and 67.6 % (advanced students) of all the relevant items. In the items of category D, E and F, the NPs are marked with an *accusative* in 60.4 % (intermediate students) and 65.2 % (advanced students) of all the relevant items. The principle of ego-nearness is precisely the principle that case marking in German is based on. Items of Category A, B and C require a nominative. Items of Category D, E and F require an accusative.

Given a significant interaction between both main factors (i.e. IMPL PERSON and DET), however, it is appropriate to analyse the simple main effects separately. Post-hoc testing shows that within the categories of NPs that are ego-near, i.e. without an implied person, indefinite NPs (as in the items of Category B) are significantly more often marked with an accusative than definite and determinerless NPs (see Tables 5 and 6).

Table 5: Scheffé Test on the use of accusatives in NPs without an implied person by 37 intermediate Dutch students of L2 German

DF vs. IDF	4.93*
DF vs. DTL	2.43
IDF vs. DTL	7.36*

* p < .01

Table 6: Scheffé Test on the use of accusatives in NPs without an implied person by 36 advanced Dutch students of L2 German

DF vs. IDF	7.65*
DF vs. DTL	1.11
IDF vs. DTL	8.76*

* p < .01

Hence, subjects prefer the accusative in items such as *Ein/Einen Polizist(en) erschossen* ('A policeman shot') and *Kein/Keinen Tropfen mehr* ('Not a single drop!'). The nominative, on the other hand, is chosen more frequently in items such as *Der/Den frühere(n) Senator Dahrendorf rehabilitiert* ('The former Senator Dahrendorf rehabilitated') and *Der/Den Hamburger SV fest im Griff von Hajduk Split* ('The Hamburg SV firmly in the grip of Hajduk Split') as well as in *Schwedischer/-en Konsul in Stettin ausgewiesen* ('Swedish consul in Stettin expelled') and *Entscheidender/-en Schritt zur Rüstungsbegrenzung erwartet* ('Decisive step towards arms limitation expected').

Within the categories of nonego-near NPs, i.e. NPs *with* an implied person, post-hoc testing shows that determinerless NPs (as in the items of Category F) are significantly less often marked with an accusative than definite and indefinite NPs (see Tables 7 and 8).

Table 7: Scheffé Test for use of accusatives in NPs with an implied person by 37 intermediate Dutch students of L2 German

DF vs. IDF	.25
DF vs. DTL	4.22*
IDF vs. DTL	3.97*

* p < .01

Table 8: Scheffé Test for use of accusative in NPs with an implied person by 36 advanced Dutch students of L2 German

DF vs. IDF	1.69
DF vs. DTL	5.38*
IDF vs. DTL	3.70*

* p < .01

Hence, NP constructions such as *Zerfetzter/-en Strohhut in den Händen* ('Tattered straw hat in his hands') and *Aufregender/-en Gedanken im Sinn* ('Exciting thought in his mind') are less often used with an accusative compared to *Der/Den Nachbar(n) erschossen* ('The neighbour shot dead') and *Der/Den Blick* fest nach oben gerichtet ('The glance firmly directed upwards') as well as *Ein/Einen Freund verraten* ('A friend betrayed') and *Kein/Keinen Kuß?* ('No kiss?').

These results can be summarized as follows. In headline type constructions, Dutch L2 learners prefer to use indefinite NPs with an accusative and determiner-less NPs with a nominative. Definite NPs, however, are used either with a nominative or an accusative depending on whether there is a person implied. Items of Category A [- IMPL PERSON, DF] are preferably used with a nominative, items of category D [+ IMPL PERSON, DF] are used most frequently with an accusative.

It is possible to explain these results with respect to the referential properties of these NP categories in L1 Dutch. Whereas indefinite and determiner-less NPs are typically used to introduce a referent into the discourse, definite NPs

are used with reference to common knowledge. Definite NPs entail the presupposition that the hearer knows which referent is referred to. Newly introduced referents can be used with or without referential prominence. They are referentially prominent, if they refer to a specific entity; they are non-referentially prominent if they are used non-specifically. Determinerless NPs, such as in *Schwedischer/-en Konsul in Stettin ausgewiesen* ('Swedish consul in Stettin expelled'), refer to newly introduced specific referents. Indefinite NPs, such as in *Ein/Einen Polizist(en) erschossen* ('A policeman shot'), are typically used with newly introduced non-specific referents. Due to these differences in specific (referentially prominent) or non-specific (non-referentially prominent) use, Dutch learners of German prefer to use determinerless NPs with a nominative and indefinite NPs with an accusative. In definite NPs, reference to common knowledge can be either presupposed on the basis of shared knowledge of the world, or it can be established relative to an entity that the NP belongs to. If the definite NP refers to shared common knowledge, such as in *Der/Den frühere(n) Senator Dahrendorf rehabilitiert* ('The former Senator Dahrendorf rehabilitated'), it is used with referential prominence and Dutch learners will prefer to use it with a nominative. If the NP is definite due to an implied relationship to a person that it belongs to, such as in *Der/Den Nachbar(n) erschossen* ('The neighbour shot dead'), it is used with non-referential prominence and therefore the accusative is seen as the adequate option.

In this interpretation, the experimental results constitute evidence for our hypothesis that case marking in L2 German of Dutch learners is based on these learners' intuitions regarding the functioning of the subject and the object in their L1. Transfer of the L1 intuitions on the relation between the subject function and referential prominence, on the one hand, and the relation between the object function and non-referential prominence, on the other, explains why Dutch learners use the nominative with NPs that are referentially prominent and the accusative with NPs that are non-referentially prominent.

Interlanguage case marking in American learners of German. The American learners of German were divided into two groups: beginners (students) and advanced learners (teaching assistants and faculty). This distinction, however, is a very global one and does not always establish the level to which these learners have acquired the case marking system in L2 German. Therefore, the American L2 German speakers were subsequently divided into two groups according to whether or not they had, to some extent, acquired the relevance of the feature ±IMPL PERSON for case marking in German. The percentages of accusatives used for NPs with and without an implied person were used as a criterion in this respect. Subjects were regarded as beginners if the difference between the percentage of

accusatives used in NPs with and without an implied person was less than 20 %.

For the 21 advanced American learners of German the results of an analysis of variance with repeated measures are presented in Table 9. For these learners both main effects (IMPL PERSON, with two variables, and DET, with three variables) and the interaction are significant.

Table 9: Analysis of variance with repeated measures (two within factors). Grammaticality judgements by 21 advanced American learners of German in NP constructions with nominative/accusative morphology

Source of variance	SS	df	MS	F
IMPLIED PERSON (A): with vs. without	38381.27	1	38381.27	142.33**
error	5393.28	20	269.66	
DET (B): DF, IDF, DTL	6940.56	2	3470.28	7.23**
error	19212.59	40	480.31	
AB	2177.15	2	1088.57	3.55*
error	12280.19	40	307.00	

* $p < .05$ ** $p < .01$

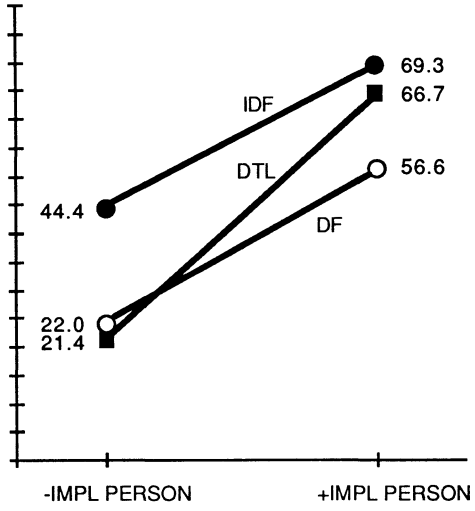
In Table 10 the mean percentages of accusative forms regarded as correct are given.

Table 10: Means of accusatives (%) in NP constructions regarded as correct by 21 advanced American learners of German

	DF	IDF	DTL
- IMPLIED PERSON	22.0	44.4	21.4
+IMPLIED PERSON	56.6	69.3	66.7

The data of Table 10 are represented graphically in Figure 5.

Figure 5 Accusatives (%) in NP constructions regarded as correct by 21 *advanced American* learners of German. Interaction IMPLIED PERSON *DET.



For advanced learners with L1 English, who have acquired the relation between the absence or presence of an implied, ego-near entity and case marking in L2 German, Table 9 shows a significant interaction between the two factors IMPL PERSON and DET. Given this significant interaction, it is appropriate to analyse the simple main effects separately. Post-hoc testing shows that within the categories of NPs that are ego-near, i.e. without an implied person, indefinite NPs are significantly more often marked with an incorrect accusative than definite and determinerless NPs (see Table 11).

Table 11: Scheffé Test on the use of accusative in NPs without an implied person by 21 advanced American learners of L2 German

DF vs. IDF	3.29*
DF vs. DTL	.09
IDF vs. DTL	3.38*

* $p < .01$

Hence, items such as *Ein/Einen Polizist(en) erschossen* ('A policeman shot') and *Kein/Keinen Tropfen mehr* ('Not a single drop!') are used less often with a nominative compared to *Der/Den frühere(n) Senator Dahrendorf rehabilitiert* ('The former Senator Dahrendorf rehabilitated') and *Der/Den Hamburger SV fest im Griff von Hajduk Splitt* ('The Hamburg SV firmly in the grip of Hajduk Split') as well as *Schwedischer/-en Konsul in Stettin ausgewiesen* ('Swedish consul in Stettin expelled') and *Entscheidender/-en Schritt zur Rüstungsbegrenzung erwartet* ('Decisive step towards arms limitation expected').

Within the categories of nonego-near NPs, i.e. NPs *with* an implied person, post-hoc testing shows that at .05 there is a significant difference between definite and indefinite NPs (see Table 12).

Table 12: Scheffé Test on the use of accusatives in NPs with an implied person by 21 advanced American learners of German

DF vs. IDF	1.82*
DF vs. DTL	1.49
IDF vs. DTL	.38

* $p < .05$

This means that constructions such as *Der/Den Nachbar(n) erschossen* ('The neighbour shot dead') and *Der/Den Blick fest nach oben gerichtet* ('The glance firmly directed upwards') are less often used with an accusative than *Ein/Einen Freund verraten* ('A friend betrayed') and *Kein/Keinen Kuß?* ('No kiss?'). The

difference between definite and determinerless NPs does not reach significance.

These results can be summarized as follows. In headline-type constructions, advanced American L2 learners prefer to use definite NPs with a nominative and indefinite NPs with an accusative. With determinerless NPs the use of either a nominative or an accusative depends to a greater extent on the property of [± IMPL PERSON]. Items of category [- IMPL PERSON, DTL] are preferably used with a nominative, items of category [+ IMPL PERSON, DTL] are used most frequently with an accusative.

It is possible to explain these results with respect to the referential properties of these NP categories in L1 English. Definite NPs are used with reference to common knowledge and thereby have referential prominence. Due to their L1, native speakers of English will prefer to use a nominative. Indefinite NPs are typically used with non-specific reference. Here, American learners of German prefer to use an accusative. For native speakers of English, determinerless NPs are unspecified with respect to referential prominence. Therefore, the absence or presence of an implied person has greater influence on case marking with determinerless NPs.

In this interpretation, these experimental results constitute further evidence for our hypothesis that case marking in L2 German is based on learners' intuitions regarding the functioning of the subject and the object in their L1. Transfer of their L1 intuitions explains why American learners use the nominative with NPs that are referentially prominent and the accusative with NPs that are non-referentially prominent. If the determiner is absent, however, definiteness and indefiniteness cannot be used in identifying referential prominence. In these instances L1 English speakers will tend to rely more on the presence or absence of an implied person.

Differences between the interlanguage case marking systems of Dutch and American learners of German. Table 13 shows the percentage of accusative forms with intermediate and advanced Dutch learners and with beginning and advanced American learners of German.

The percentages for the six categories are tabulated with respect to the form of the determiner (i.e. determinerless, definite, indefinite) and according to the absence or presence of an implied person (±IMPL PERSON). Using the figures that indicate the *difference* in use of the accusative for determinerless, definite and indefinite NPs, it can be demonstrated to what degree the feature ±IMPL PERSON is relevant for case marking in L2 German. If this figure is high, accusative and nominative forms are used as in German. If this figure is low, the form of the determiner is of comparatively great importance.

Table 13: The use of accusative case forms (%) in NP constructions by beginning (24) and advanced (21) American learners and by intermediate (37) and advanced (36) Dutch students

American learners

	beginning (24)			advanced (21)		
	DF	IDF	DTL	DF	IDF	DTL
- IMPL PERSON	49.8	51.0	54.6	22.0	44.4	21.4
+IMPL PERSON	50.2	47.7	62.5	56.6	69.3	66.7
difference	0.4	-3.3	7.9	34.6	24.9	45.3

Dutch students

	intermediate (37)			advanced (36)		
	DF	IDF	DTL	DF	IDF	DTL
- IMPL PERSON	27.6	51.3	15.9	20.8	61.6	14.9
+IMPL PERSON	67.6	66.4	47.3	77.8	68.8	49.1
difference	40.0	15.1	31.4	57.0	7.2	34.2

For intermediate Dutch learners and advanced Dutch and American learners of German, the feature ±IMPL PERSON, depending on the form of the determiner, has relevance for interlanguage case marking. For these learners the absence or presence of a semantically implied person is least relevant with indefinite NPs. Examples are NPs in constructions such as *Ein/Einen Sieg aus den Händen gegeben* ('a victory given away') that are generally marked with an accusative. Indefinite NPs are apparently interpreted as non-referentially prominent.

In the test items with definite and determinerless NPs, the relevance of the feature ±IMPL PERSON differs for advanced American learners and Dutch students. A comparison of the differences between the use of accusatives in definite and determinerless NPs both with and without an implied person shows that for

Americans the difference between NPs with and without an implied person is greater with determinerless NPs, whereas for Dutch students it is greater with definite NPs (see the figures in Table 13). For American learners, this difference in definite NPs is 34.6% and in determinerless NPs it is 45.3%. For intermediate and advanced Dutch learners this difference in definite NPs is 40.0% and 57.0% and in determinerless NPs it is 31.4% and 34.2%.

In order to ascertain, whether these differences were significant for each of the intermediate Dutch and advanced Dutch and American subjects, difference scores were computed between definite NPs with and without implied person on the one hand, and determinerless NPs with and without implied person on the other. These difference scores were analysed with an analysis of variance with repeated measures. For the Dutch students (37 intermediate and 36 advanced) and the 21 advanced American learners of L2 German, the results of the analysis of variance are presented in Table 14.

Table 14: Analysis of variance with repeated measures (one between and one within factor). Differences in grammaticality judgements for NPs (DF and DTL) with and without an implied person by 21 American and 73 Dutch learners of German

Source of variance	SS	df	MS	F
between groups				
L1 (A): Amer. vs. Dutch	61.52	1	61.52	.08
error	70579.81	92	767.17	
within groups				
DET (B): DF, DTL	90.59	1	90.59	.15
AB	5100.21	1	5100.21	8.70*
error	53947.07	92	586.38	

* $p < .01$

The interaction between L1 (advanced American learners vs. Dutch students) and DET (definite vs. determinerless) turns out to be significant at the .01 level. This means not only that the differences between the use of accusatives in definite NPs with and without an implied person is greater for Dutch students than for advanced American learners, but also that the differences between the use of accusatives in determinerless NPs with and without an implied person is greater for advanced American learners than for Dutch students. This significant interaction can be explained with respect to different interpretations of definite and determinerless NPs by L1 speakers of English and Dutch.

For American learners definiteness is apparently always related to referential prominence. Therefore, they use more nominatives both in constructions such as *Der/Den Sahara-Staat von 36 Ländern anerkannt* ('The Sahara-State officially recognized by 36 countries') and *Der/Den Blick fest nach oben gerichtet* ('The glance firmly directed upwards'). For Dutch learners, however, definiteness means 'identifiability' in the first place. Identifiability can be established either in that the NP expressed is assumed to be known to the hearer or as a consequence of the fact that the NP expressed has to be related to another entity. If identifiability can only be established through assumed hearer's knowledge such as in *Der Sahara-Staat von 36 Ländern anerkannt* ('The Sahara-State officially recognized by 36 countries') the NP will be marked with a correct nominative. On the other hand, if identifiability of an NP is established through an implied person, the NP expressed is definite, but non-referentially prominent and consequently has to be marked with an accusative such as in *Den Blick fest nach oben gerichtet* ('The glance firmly directed upwards'). Thus L1-functional differences explain why in definite NPs the feature ±IMPL PERSON is of less influence on the interlanguage case marking of advanced American learners than it is for Dutch learners.

From the absence of a determiner in NPs such as in *Schwedischer/-en Konsul in Stettin ausgewiesen* ('Swedish consul in Stettin expelled') and in *Wütender/-en Blick in den Augen* ('Fierceful glance in the eyes') American learners appear to infer that referential prominence is less relevant for case marking in L2 German. Consequently, the feature [±IMPL PERSON] becomes more important. For Dutch learners, on the other hand, the absence of a determiner seems to be interpreted as specific reference. Consequently, the feature ±IMPL PERSON is less relevant and more incorrect nominatives such as in **Wütender Blick in den Augen* ('Fierceful glance in the eyes') are accepted as grammatically correct.

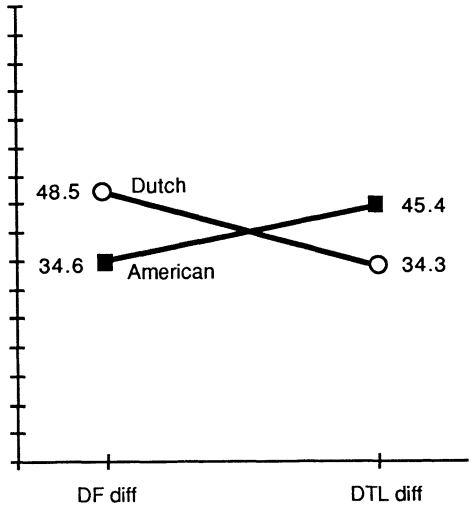
In Table 15 the mean percentage of the difference scores (i.e. accusatives in NPs with an implied person as opposed to NPs without an implied person) for definite and determinerless NPs are presented with respect to the L1 (English vs. Dutch).

Table 15: Means of differences in grammaticality judgements for NPs (DF and DTL) with and without an implied person by 21 American and 73 Dutch learners of German

	DF	DTL
L1 English	34.6	45.4
L1 Dutch	48.5	34.3

The data of Table 15 are represented graphically in Figure 6.

Figure 6 Differences in grammaticality judgements for NPs *with* and *without* an implied person by 21 *American* and 73 *Dutch* learners of German.



The differences between the interlanguage case marking of intermediate and advanced Dutch and American learners of German can be summarized as follows. For Dutch learners 'definiteness' is related especially to identifiability, whereas for Americans it is primarily related to 'referential prominence'. A determinerless NP in headline-type constructions is interpreted by Dutch learners primarily as

referentially prominent. The absence of a determiner indicates reference to a specific entity. For American learners, however, the absence of a determiner means that the NP is less bound to be interpreted as either referentially or non-referentially prominent. Hence, interlanguage case marking of Dutch and American learners of German is based on both role- *and* referential prominence. With respect to case marking of NPs that are definite, indefinite or determinerless, differences can be explained according to the type of determiner and L1-functional properties of referential prominence.

NOTES

* The research in this paper has been supported by a grant from the Netherlands organization for scientific research NWO.

1. Counterexamples are sentences such as *mich friert* (me-ACC freezes, 'I am freezing'), *mich freut* (me-ACC is-glad, 'I am glad'). Exactly for these constructions, there are equivalent ones in which the experiencer has the nominative: *ich friere* ('I am freezing'), *ich freue mich* ('I am glad').
2. The subject property of a relatively high degree of contribution also explains the difference in meaning of words like *car* and *hand* in sentences such as

(a) He drove the car against the wall
(b) The car drove against the wall

(a) He knocked with his hand on the table
(b) His hand knocked on the table

In the (b)-sentences *car* and *hand* can easily be interpreted as agents, which is impossible in the (a)-sentences.
3. There are, however, exceptions occurring particularly in English and to a lesser extent also in Dutch. These constructions are called 'secondary subjectivations' (Rohdenburg 1974) or 'second-option subjects' (Plank 1980). They show a "marked subject choice without also employing a marked, non-basic ... form of the predicate" (Plank 1980:40). Examples are:

The car burst a tyre
The roof was leaking water
This caravan sleeps five persons
The latest edition of the bible has added a chapter
Keegan's second goal ended the match (Plank 1980:48)

The "absence of such second-option subject constructions in German is not entirely due to lexical constraints on subject selection per se, but is due to lexical constraints on direct-object selection" (Plank 1980:48). Predicates in German can be used with either indirect- or direct objects. Indirect objects designate a non-polar opposition to the subject, whereas direct objects indicate that they are polar-opposite to the subject. Polar-opposite (or direct) objects refer to entities that are 'least actively involved', 'most thoroughly affected/effected', whereas nonpolar-opposite objects refer to a 'less active participant' that is 'less completely under the influence and control of the agent'. The

choice between a direct and an indirect object depending on 'the degree of opposedness of the arguments of the predicate' is established by the particular predicate. This means that there is 'classificational agreement' or 'semantic coherence' between predicates and object arguments (Plank 1980:42f and 49f). This relation of semantic coherence between a particular predicate and a polar- (direct) or nonpolar- (indirect) opposite object has been empirically investigated by Zubin (1975, 1977). In varying the degree of participancy of an object in a specific event Zubin found that in those situations in which the object was least actively involved predicates are used that govern direct objects (encoded with the accusative), whereas in those situations in which the object is only less actively involved predicates are used that govern indirect objects (encoded with the dative). Plank (1980:43) notes that verb pairs that are different "with respect to the lexical determination of their objects as polar (i.e. least actively involved) or non-polar (i.e. less actively involved) opposites ... may be formally unrelated, but more often they turn out to be morphologically transparent variants involving verb prefixes (....) ". Examples are *unterstützen* 'to support s.o.(acc.)' vs. helfen 'to help s.o.(dat.)'; *meiden* 'to avoid s.o.(acc.)' vs. *ausweichen* 'to give way to s.o.(dat.)' ; bedienen 'to wait on s.o.(acc.), to handle s.th.(acc.) vs. *dienen* 'to be a servant to s.o.(dat.)'; verfolgen 'to pursue s.o./s.th.(acc.)' vs. *folgen* 'to follow s.o.(dat.)'; *beliefern* 'to supply s.o.(acc.) with s.th.' vs. *liefern* 'to deliver s.th.(acc.) to s.o.(dat.)'; *berauben* 'to rob s.o.(acc.) of s.th.' vs. rauben 'to rob s.th.(acc.) from s.o.(dat.)'.

English, however, does not make a distinction between nonpolar- (indirect) and polar-opposite (direct) objects, i.e. it has a 'core-object relation' "lacking in semantic specificity" (Plank 1980:49). This core object is determined by its relation to the subject which is due to the particular predicate: a semantically less specific object must be related to a semantically less specific predicate. Hence, there is a relation between object differentiation, whether or not "arguments in various role-relationships may assume the subject relation with basic i.e. non-marked predicates" (Plank, 1980:41), and the meaning of predicates.

The difference between German and English with respect to the relation between subject and object can be demonstrated with the following example (see Plank 1980,48 and note 44): A sentence in English such as *Keegan's second goal ended the match* cannot be regarded as translationally equivalent to the German sentence *Keegans zweites Tor beendete des Spiel.* On the basis of its relation of polar-opposedness the German sentence can only be interpreted in such a way that "Keegan's second goal" was "somehow *responsible for* the end of the match", whereas for the English sentence it was "merely *coinciding with it*". A correct translation in German expressing this meaning is given by the sentence *Mit Keegans zweitem Tor endete das Spiel* ('With Keegan's second goal the match ended').

4. Givón (1976:152) postulates an "implicational hierarchy of likelihood of verb agreement" based on a universal hierarchy of topicality. This hierarchy is determined by binary implicational relations such as

(a) HUMAN > NON-HUMAN
(b) DEFINITE > INDEFINITE
(c) MORE INVOLVED PARTICIPANT > LESS INVOLVED PARTICIPANT
(d) 1ST PERSON > 2ND PERSON > 3RD PERSON

In other words, according to Givón, the subject function as the nominal category which establishes verb agreement, is based on the attributes mentioned in (a), (b), (c), and (d). Whereas feature (b), i.e. definiteness, obviously relates to the property of referential prominence, i.e. topicality, (a), (c) and (d) can be seen as attributes of egocentricity.

REFERENCES

Anisfeld, M. and I. Klenbort. 1973. On the functions of structural paraphrase. The view from the passive voice. *Psychological Bulletin* 79.117-126.

Clark, H.H. and J.S. Begun. 1971. The semantics of sentence subjects. *Language and Speech* 14. 34-46.

Clark, H.H. 1973. Space, time, semantics, and the child. *Cognitive Development and the Acquisition of Language* ed. by T.E. Moore, 27-64. New York: Academic Press.

Comrie, B. 1977. In defense of spontaneous demotion: The impersonal passive. *Syntax and Semantics. Vol. 8: Grammatical Relations* ed. by P. Cole and J.M. Sadock, 47-58. New York: Academic Press.

Ertel, S. 1974. Satzsubjekt und Ich-Perspektive. *Bericht über den 28. Kongreß der deutschen Gesellschaft für Psychologie in Saarbrücken 1972* ed. by L.H. Eckensberger, U.S., Eckensberger. Bd. 1. Wissenschaftstheorie und Psycholinguistik, 129-139. Göttingen: Verlag für Psychologie, Hogrefe.

Ertel, S. 1977. Where do the subjects of sentences come from? *Sentence Production: Developments in Research and Theory* ed. by S. Rosenberg, 141-167. Hillsdale, N.J.: Erlbaum.

Fillmore, C.J. 1977. The case for case reopened. *Syntax and Semantics Vol. 8.: Grammatical Relations* ed. by P. Cole and J.M. Sadock, 59-81. New York: Academic Press.

Givón, T. 1976. Topic, pronoun and grammatical agreement. *Subject and Topic* ed. by C.N. Li, 151-188. New York: Academic Press.

Hupet, M. and B. Le Bouedec. 1975. Definiteness and voice in the interpretation of active and passive sentences. *Quarterly Journal of Experimental Psychology* 27.323-330.

Johnson-Laird, P.N. 1968. The choice of the passive voice in a communicative task. *British Journal of Psychology* 59.7-15.

Jordens, P. 1983. *Das deutsche Kasussystem im Fremdspracherwerb*. Eine psycholinguistische und fehleranalytische Untersuchung zum interimsprachlichen Kasusmarkierungssystem niederländisch- und englischsprachiger Deutschstudierender. Tübingen: Günter Narr.

Keenan, E. 1976. Towards a universal definition of "subject". *Subject and Topic* ed. by C.N. Li, 305-330. New York: Academic Press.

MacWhinney, B. and E. Bates. 1978. Sentential devices for conveying givenness and newness: A cross-cultural developmental study. *Journal of Verbal Learning and Verbal Behavior* 17.539-558.

Pape-Müller, S. 1980. *Textfunktionen des Passivs*. Untersuchungen zur Verwendung von grammatisch-lexikalischen Passivformen. Tübingen: Niemeyer.

Plank, F. 1980. Verbs and Objects in Semantic Agreement: Minor Differences between Languages that Might Suggest a Major One. Hannover.

Rohdenburg, G. 1974. *Sekundäre Subjektivierungen im Englischen und Deutschen*. Vergleichende Untersuchungen zur Verb- und Adjektivsyntax. Bielefeld: Cornelsen-Velhagen & Klasing.

Schachter, P. 1977. Reference-related and role-related properties of subjects. *Syntax and Semantics, Vol. 8: Grammatical Relations* ed. by P. Cole and J. Sadock, 279-306. New York: Academic Press.

Tannenbaum, P. and F. Williams. 1968. Generation of active and passive sentences as a function of subject and object focus. *Journal of Verbal Learning and Verbal Behavior* 7.246-250.

Turner, E.A. and A.R. Rommetveit. 1968. Focus of attention in recall of active and passive sentences. *Journal of Verbal Learning and Verbal Behavior* 7.543-548.

Weigand, E. 1978. *Die Zuordnung von Ausdruck und Inhalt bei den grammatischen Kategorien des Deutschen*. Tübingen: Niemeyer.

Weisgerber, L. 1963. Die Welt im 'Passiv'. *Die Wissenschaft von Deutscher Sprache und Dichtung. Methoden, Probleme, Aufgaben* ed. by S. Gutenbrunner, H. Moser, W. Rehm,

H. Rupp, 25-59. Stuttgart: Klett.
Zubin, D.A. 1975. On the distributional properties of surface morphology and their consequences for semantic analysis. *Columbia University Working Papers on Linguistics* 2.189-218.
Zubin, D.A. 1977. The semantic basis of case alternation in German. *Studies in Language Variation. Semantics, Syntax, Phonology, Pragmatics, Social Situations, Ethnographic Approaches* ed. by R.W. Fasold and R.W. Shuy, 88-99. Washington D.C.: Georgetown University Press.
Zubin, D.A. 1979. Discourse function of morphology. The Focus System in German. *Syntax and Semantics, Vol. 12: Discourse and Syntax* ed. by T. Givón, 469-504. New York: Academic Press.

APPENDIX

Test sentences: the six relevant categories.

1.1 Category A: [-IMPL PERSON, DF]

Der/Den 'Hexer' in Caracas gefaßt.
'The 'witch' caught in Caracas'
Der/Den frühere(n) Senator Dahrendorf rehabilitiert
'The former Senator Dahrendorf rehabilitated'
Der/Den Räuber der Meere als Delikatesse hoch geschätzt.
'The predator of the seas highly appreciated as a delicacy'
Jeder/Jeden dritte(n) Textil-Arbeitsplatz verloren.
'Every third textile job lost'
Der/Den Prager Prozeß im Westen nachgespielt.
'The Prague trial re-enacted in the West'
Der/den Sahara-Staat von 36 Ländern anerkannt
'The Sahara-State officially recognized by 36 countries'
Der/Den Hamburger SV fest im Griff von Hajduk Split
'The Hamburg SV firmly in the grip of Hajduk Split'
Der/Den Sieg in der Tasche des Gegners.
'The victory in the opponent's bag'
Der/Den Tod in den Augen des Feindes.
'[The] death in the eyes of the enemy'
Der/Den Dreh mit mit dem doppelten Ausweis.
'The trick with the double identity card'

1.2 Category B: [-IMPL PERSON, IDF]

Ein/Einen Polizist(en) erschossen
'A policeman shot'
Ein/Einen Punkt verloren
'A point lost'
Ein/Einen Palästinenser-Staat im Südlibanon geplant
'A Palestinian state planned in Southern Lebanon'
Kein/Keinen Tropfen mehr!
'Not a single drop!'
Kein/Keinen Wein mehr!
'No more wine!'

Ein/Einen Tisch für zwei
'A table for two'

1.3 Category C: [-IMPL PERSON, DTL]

Schwedischer/-en Konsul in Stettin ausgewiesen
'Swedish consul in Stettin expelled'
Entführter/-en Säugling in Ost-Berlin gefunden
'Kidnapped baby found in East Berlin'
Deutscher/-en in Moskau festgenommen.
'German arrested in Moscow'
Entscheidender/-en Schritt zur Rüstungsbegrenzung erwartet
'Decisive step towards arms limitation expected'
Gepflegter/-en Imbiß gewünscht.
'Good snack wanted'
Achttausender/-en (= Berg über 8000 m hoch) 'ausgebucht'.
'8000 m-high mountain booked up'
Großer/-en Erfolg mit kleinen Klassen
'Great success with small classes'
Alter/-en Wein in neuen Schläuchen.
'Old wine in new bottles'

2.1 Category D: [+IMPL PERSON, DF]

Der/Den Nachbarn erschossen
'The/His neighbour shot dead'
Der/Den Zimmerkollege(n) durch Brandstiftung getötet.
'The roommate killed through arson'
Der/Den Freund und er-/sichselbst erschossen.
'[Someone has] shot his friend and himself'
Der/Den Blick fest nach oben gerichtet
'The/Their glance firmly directed upwards'
Der/Den Traum vom Aufstieg ausgeträumt.
'The dream of promotion over'
Der/Den Sieg verschenkt.
'The victory given away'
Der/Den Finger am Abzug. Autofahrer bei einer Verkehrskontrolle erschossen
'The finger on the trigger. Driver shot at traffic check'
Der/Den Abstieg vor Augen: Eintracht Braunschweig.
'Relegation before their eyes. Eintracht Braunschweig'
Der/Den Sieg in der Tasche.
'The victory in the bag'

2.2 Category E: [+IMPL PERSON, IDF]

Ein/Einen Freund verraten
'A friend betrayed'
Ein/Einen Arm abgesägt.
'An arm sawn off'
Ein/Einen Sieg aus Händen gegeben

'A victory given away'
Ein/Einen Schal um die Schultern
'A scarf around the shoulders'
Ein/Einen goldener/-en Kamm im Haar
'A golden comb in the hair'
Ein/Einen Oskar für Onkel Herbert
'An Oscar for Uncle Herbert'
Kein/Keinen Kuß?
'No kiss?'
Kein/Keinen Schluck mehr!
'No more drink!'
So ein/einen Blick als wir weggingen!
'Such a look when we left!'

2.3 Category F: [+IMPL PERSON, DTL]; 6 items, e.g.

Zerfetzter/-en Strohhut in den Händen
'Tattered straw hat in his hands'
Roter/-en Saft, weißer/-en Saft für den König
'Red juice, white juice for the King'
Wütender/-en Blick in den Augen
'Fierceful glance in the eyes'
Aufregender/-en Gedanke(n) im Sinn
'Exciting thought in his mind'
Neuer/-en Auftrag in der Tasche
'New order in the bag'
Alter/-en Hut auf dem Kopf
'Old hat on the head'

Prior Linguistic Knowledge And The Conservatism Of The Learning Procedure: Grammaticality Judgments Of Unilingual And Multilingual Learners

Helmut Zobl

Introduction

In his discussion of the evolution of second language research, Rutherford (1988) remarks that the focus of inquiry has shifted recently from a concern with the nature of the acquisition route to a concern with the nature of the acquisition faculty which makes possible the knowledge eventually attained.[1] Nowhere is this shift more apparent than in questions posed concerning the role of the adult learner's L_1, or, more generally, his/her prior linguistic knowledge. Research of the seventies and the early eighties directed its attention to uncovering whether, under what conditions, and in what way prior linguistic experience influenced the acquisition route (e.g., Kellerman 1978; Gass 1979; Zobl 1980). Although this agenda has not been abandoned, I think it is correct to say that it has now been subsumed under the issue of the learnability of nonprimary languages by postadolescent learners.

According to current grammatical theory, the knowledge ultimately attained by the L_1 learner is made possible by a faculty-specific cognitive system composed of Universal Grammar (UG) and a learning mechanism which incorporates a theory of markedness. The latter "imposes a preference structure on the parameters of UG and ... permits the extension of core grammar to a marked periphery." (Chomsky 1981:8) Core grammar results from setting the open parameters of UG in accordance with language-specific data; the periphery is established by relaxing principles of core grammar. On one view of markedness (see Gair 1988:230-232), the initial-state markedness theory selects as unmarked the parameter value, or implementation of a grammatical principle, which generates the smallest set of sentences; the marked value generates the larger set.[2]

In relation to the role of prior linguistic knowledge in L_2 acquisition, this characterization of the L_1 learner's initial state opens up two areas of inquiry. The first seeks to answer the question whether antecedent linguistic knowledge represents the sole means whereby adults can access the system of principles and parameters (see Bley-Vroman 1989 and Flynn 1991 for opposing views). The second area, the one that will concern us here, probes the question whether prior linguistic knowledge can obscure the markedness valuations that grammatical theory imputes to the initial state. White (1986) maintains that the presence of the

marked value in the learner's L_1 may result in its adoption in the interlanguage (IL) grammar, even though the initial-state theory selects, and the L_2 input only contains evidence for, the unmarked value.

The impediment to the learnability of the L2 arising from this transfer is due to the width of the IL grammar implied by the marked value (White 1986). If the L_2 contains the unmarked value, an IL grammar set to the marked value will generate a set of sentences standing in a superset-subset relationship to the set generable by the L_2 grammar; in other words, the IL grammar will overgenerate. In order to bring it into conformity with the L_2, a learner would have to detect, in the input, the absence of those sentences generated by the wider IL grammar and amend it by grammar narrowing. Although some second language research indicates that this type of recovery may not be impossible (Zobl 1988), work in learnability has taken the position that the grammar formulated should be a conservative one.[3] Since ample evidence exists that adult learners do not always begin with the unmarked option, which selects the narrower grammar, Liceras (1988) and White (1987, 1989) have proposed that subset learning may no longer be available to adults.

In this chapter we focus attention on the relationship between antecedent linguistic knowledge and the learner's task of formulating a grammar that is powerful enough to generate the L_2 input data without overgenerating. Evidence exists which suggests that the learning procedure in adults does not initially formulate grammars in compliance with the markedness valuation the initial state would select. Although this noncompliance has been linked to L_1 transfer, it could also be the result of maturational changes, or a combination of both. One avenue of research which may advance our understanding of this relationship, and thereby contribute to an eventual theory of the learnability of nonprimary languages, involves the systematic investigation of language acquisition by adult-age unilinguals(ULs) (i.e., true L_2 acquisition) and multilinguals(MLs) (i.e., L_3, L_4, etc. acquisition). If antecedent linguistic knowledge, rather than maturational factors alone, is responsible for the reported difficulty experienced by adults in formulating conservative grammars, then we could expect MIs to differ from UIs; more precisely, we could investigate the hypothesis that MIs have more difficulty in formulating conservative grammars.

As already stated, evidence exists that adults formulate a wider grammar than is warranted, due to L_1 transfer. To the extent that MIs have at least one or more languages at their disposal than UIs, the probability of this happening simply increases. However, there is also evidence to suggest that antecedent linguistic knowledge may exercise a more subtle influence on the adult's ability to formulate a subset grammar (again assuming that maturational changes are not the sole

cause). In their investigation of English reflexive pronoun binding by adult Koreans, Finer and Broselow (1986) found that the L_1 value for binding domains was not transferred to English. Instead, their informants opted for a value intermediate to Korean and English, resulting in an IL grammar which was narrower than the Korean but wider than what the initial-state markedness theory would select (See Wexler and Manzini 1987) and English input data warrants.[4] Their findings hint at the possibility that overgeneration may arise from a more subtle influence of prior linguistic knowledge.

At the present state of L_2 research it is difficult to state just what form this subtle influence might take. Evidence for its existence, though, would reside in findings showing that Mls from diverse L_1 backgrounds experience greater difficulty than Uls in formulating a conservative grammar for a particular grammatical domain. The systematic investigation of those domains which more than others pose difficulty in this regard should make it possible to formulate more precise hypotheses about the nature of this influence.

There is a second consideration which leads us to expect differences in conservatism between Mls and Uls. It has to do with anecdotal reports (e.g., Larsen-Freeman 1983) that Mls 'pick up' languages with greater facility than Uls.[5] There is, admittedly, more than one way of accounting for the observation (assuming there is some truth to it), but one possibility is that multilinguals formulate wider grammars. As pointed out by Fodor and Crain (1987a), a conservative learning procedure necessarily progresses more slowly since it formulates grammars that are just powerful enough to fit the input data; only in the face of positive evidence will it either adopt a marked value or relax a principle. In contrast, a learning procedure which is prone to formulating more marked, thus wider, grammars will progress faster. A loss of restrictiveness will permit it to generate a larger language. It would also progress more quickly if it were able to adopt a more liberal formulation upon more slender evidence. In the first case, we could expect more overgeneration on the part of MLs; in the second case, MLs matched with ULs on global proficiency could be expected to possess more marked grammatical rules of the L_2 than ULs. Thus the faster pace of learning often attributed to MLs anecdotally would be accounted for on the assumption that they formulate less conservative grammars.

To reiterate, then, the goal of this chapter is to explore the relationship between antecedent linguistic knowledge and the conservatism of the learning procedure. Grammaticality judgments of multilingual and unilingual English L_2 learners will serve to test two hypotheses:

H_0: In judgments of grammaticality, matched Uls and Mls will not differ on sentences whose acceptance/rejection

implies grammars of differing degrees of conservatism.

H_1: In judgments of grammaticality, Mls will more often than Uls accept sentences whose generation presupposes a more marked grammar. Similarly they will more often accept sentences which presuppose a grammar that overgenerates.

Support for H_1 will be taken as evidence for the existence of an inverse relationship between the pool of antecedent linguistic knowledge available and the degree of conservatism the learning procedure adopts.

Method

In this section we introduce the instruments used 1) to identify and match the Uls and Mls in our sample, and 2) to gather data on the unilinguals' and multilinguals' IL grammars.

Classifying learners as unilingual or multilingual. A language background questionnaire was administered to the intermediate-level students enrolled in the 1988 and 1989 intensive (3 hours per day) ESL summer sessions at Carleton University. On the basis of the information provided students were classified as multilingual if they satisfied both of the following criteria:

1. chronologically, English was at least the third language in a person's language learning history; and
2. self-perceived proficiency in English did not exceed proficiency in any antecedently learned languages. This requirement served to exclude any individuals for whom English had become the dominant language.

Individuals were classified as unilingual if they satisfied the next two criteria:

3. chronologically, English was the second language in a person's language learning history; and
4. self-perceived proficiency in English exceeded proficiency in any language learned subsequently.

Matching Mls and Uls. In addition to the language background questionnaire, students were asked to complete a CLOZE test.[6] This instrument consisted of the final 50 items of the sample CLOZE contained in Cohen's (1983) Testing Language Ability in the Classroom. There was no time limit. Two native speakers of English scored each test using the acceptable word method. Uls were matched with Mls when their CLOZE scores were identical or did not differ by more than two percentage points. By matching Uls and Mls we eliminate the possibility that judgments reflective of narrower/wider grammars derive from differences in overall proficiency.

Table 1 shows the match-ups according to the CLOZE scores and the L_1 backgrounds.

Table 1. Unilingual-Multilingual Match-ups by CLOZE Scores and L_1's

CLOZE SCORES %	Unilinguals (N=18)	Multilinguals* (N=15)
90-92	German	German (French, Italian); Czech (Russian, German)
76-78	German; Chinese	Polish (Russian, German)
70	Farsi (2); French	Farsi (French); Spanish (French)
62	Chinese	Vietnamese (French)
58-60	Chinese	Bengali (Hindi)
53-54	Arabic; Thai	Chinese (Malay)
46	German; Thai	Farsi (Arabic)
42	Chinese	Farsi (Turkish)
38-40	Chinese	Spanish (Italian, Portuguese)
36	Chinese	Indonesian (Malay Arabic, Japanese)
34-36	Japanese	Farsi (Arabic, German)
34	Chinese	Malay (Chinese)
32-34	Chinese	Polish (Russian, German)

* L_2's, L_3's, etc. are in parentheses

Wherever CLOZE scores permitted it, an effort was made to match Mls and Uls whose L_1's were roughly equally distant from English.[7] In two instances this was ruled out by the CLOZE score distributions and two Chinese speakers had to be paired with, respectively, a speaker of Spanish and a speaker of Polish. Although each group is sufficiently diverse in its linguistic composition, the

presence of eight Chinese speakers among the Uls made it advisable to perform separate calculations for this linguistic group.

The grammaticality judgment task. The day after the questionnaire and the CLOZE were administered, all students completed a written, unpaced grammaticality judgment task asking for a judgment of whether a sentence was a possible English sentence or not. The instructions closely followed the recommendations in Bley-Vroman, Felix and Ioup (1988).[8] After judging the items, students were asked to write their own version ("as they would say it") of the sentences they had rejected. Sequencing the two tasks served to reduce the likelihood that a sentence would be accepted because of this requirement. The 'corrections' served as a check on whether judgments of 'impossible' had in fact targeted the relevant aspect of a sentence, and not something extraneous like tense or word choice. (See Birdsong 1989 for a discussion of these two methodological desiderata.) After deliberation it was decided that corrections did not have to provide a paraphrase of the original sentence. Work on metalinguistic performance (Gass 1983) has shown that providing a correction draws on quite different metalinguistic abilities than passing a holistic judgment. In the present case, a paraphrase requirement would have severely depressed the ratios of rejection for sentences involving constraint violations (sentences (28)-(30), for example). This type of ungrammaticality, as noted by Fodor and Crain (1987b), typically has no well-formed paraphrase equivalent and is therefore difficult to correct, even for NSs.

Since the goal of the investigation was to obtain information on the degree of conservatism characterizing the IL grammars of the Uls and the Mls, it was felt that intuitional responses (and corrections) would offer the least oblique source of data on the grammars they had formulated with respect to the grammatical domains represented on the judgment task. Many of the sentences were modelled on those employed in earlier studies by Felix (1988) and Bley-Vroman, Felix and Ioup (1988). A number of sentences drawn from a processing experiment by Frazier, Clifton and Randall (1983) were also included, but these will not be reported on here. The set of sentences we will discuss, then, is made up of 12 grammatical and 18 ungrammatical sentences, using textbook judgments. Eight native speakers, students enrolled in a TESL certificate program, provided the base-line data for the judgment task.

Results

We begin this section by presenting, in Table 2, the means and standard deviations for the CLOZE and judgment tasks. After that we present the sentences from the judgment task.

Table 2. CLOZE and Judgment Accuracy Means, Standard Deviations and Rejection Ratios

	Nss	Uls			Mls
		Non-Chinese	Chinese	All	
CLOZE					
$\bar{X}$	-	61.3	52.0	55.4	55.9
SD	-	16.8	17.1	17.6	20.3
Judgments					
$\bar{X}$	-	75.6	63.6	71.0	72.0
SD	-	7.6	6.2	9.0	16.4
Ratio of Non-accepting Responses	62.1	64.6	49.2	57.7	53.5

A number of between-task and between-group differences in Table 2 deserve to be singled out for emphasis. First, it should be noted that, as a group, the Chinese-speaking Uls influence the scores for the entire UL group, as they have a lower group mean both on the CLOZE and the judgments.

Second, the Uls and the MLs have near-identical CLOZE means and judgment means (55.4 vs. 55.9 and 71.0 vs. 72.0, respectively). If we now consider the respective standard deviations, we see that the variance on the judgment task is comparatively smaller for all groups, indicating that their performance has become more homogeneous. This is to be expected. The CLOZE is a production task, traditionally viewed as more demanding than passing a judgment. Furthermore, compared to the CLOZE, the judgment task taps a much narrower range of linguistic knowledge. Given this expected gain in homogeneity, it is therefore all the more noteworthy that the ML group improved least (3.9 vs. 8.6). The greater homogeneity of the UL group is not attributable to the Chinese speakers, whose group SD is only slightly lower than that of the non-Chinese ULs (6.2 vs. 7.6). Thus, as a group, the MLs' judgments are less uniform than those of the ULs'.

The second important UL-ML difference concerns the ratio of nonaccepting responses to accepting responses. The eight NSs rejected 62.1% of the sentences. (Using textbook judgments, the ratio should be 60:40.) The Chinese-speaking group, who had the lowest CLOZE mean and judgment accuracy mean, also reveal themselves to be the most accepting. Since the UL group and the ML group had near-identical means on these tasks their ratios should be comparable as well. However, it turns out that the MLs are more accepting than the entire UL group (53.5 vs. 57.7), and especially so in comparison with the non-Chinese UL's (53.5 vs. 64.6). This finding represents the first piece of support for the claim that MLs' grammars may be prone to overgenerate.

We turn now to an examination of the intuitional responses. Each grammatical domain is introduced by a few remarks clarifying how judgments relate to the conservatism of the grammar. Immediately below the sentences we report the frequency of rejection for each group. The designation R(ejection)/A(c-ceptance) after each sentence number gives the majority NS response. [9]

Adjacency of Verb and Object

On one influential view, a strict word order language like English rests on structural case-marking (Stowell 1981). There is a case-marking condition which requires the object NP to be adjacent to the verb. Moreover, in the double object construction, V NP NP, both the indirect and the direct object must be contiguous. As Berwick (1985) argues, a grammar which generates these elements in contiguity is more conservative than one which permits their interruption by adverbs and PP's. In sentences (1) and (2) the adjacency condition is contravened by the adverbs quickly and patiently and in sentence (3), by the prep. phrase to her boyfriend.

(1) *A waitress brought the customer quickly a menu.
(2) *Did the teacher explain patiently the answer?
(3) *The girl was sending to her boyfriend a letter.

Rejections	ULs			MLs
	Non-Chinese	Chinese	All	
1. (R)	70.0	75.0	72.5	53.3
2. (R)	60.0	37.5	50.0	40.0
3. (R)	60.0	50.0	55.5	50.0

Indirect and Direct Object Passive

In most dialects of English, passive NP-movement from the double object

subcategorization V NP NP can only take place from the position adjacent to the verb. On one analysis (Culicover and Wilkins 1984), this restriction is related to an adjacency requirement on the antecedent, the subject NP, and its trace, the position from which movement took place. Yet another analysis relates the restriction to case-marking. If the direct object NP moves, the verb, upon passivization, loses the ability to assign case to the indirect object, which would remain caseless.

On a more general level, analyses of English concur in viewing NP-movement from the V NP NP subcategorization as being more marked than NP-movement from the V NP PP subcategorization (Mazurkewich 1984). Thus, movement from V NP NP implies a wider grammar than movement from V NP PP and, as for the former, movement from both positions requires a more liberal grammar than movement from the verb-adjacent position.

(4) Mary was shown the new toy.

(5) *The new toy was shown Mary.

Rejections	ULs			MLs
	Non-Chinese	Chinese	All	
4. (A)	11.1*	12.5	11.7	13.3
5. (R)	100.0	100.0	100.0	66.7

* One UL rejected V NP NP in the active voice control sentence.

Indirect and Direct Object Wh-movement

Wh-movement of the indirect object from the V NP NP frame is generally regarded as infelicitous. Fodor (1978) explains this with reference to a processing restriction she terms the XX Extraction Constraint. In parsing a string in which the indirect object has Wh-moved, the parser would have difficulty detecting the gap since its expectation that an NP will follow the verb is in fact met by the direct object NP.

As with passive movement, a grammar permitting movement from both positions is more permissive than one which only allows Wh-movement from the direct object position. Similarly, Wh-movement from the V NP NP subcategorization presupposes a wider grammar than one which restricts Wh-movement to the V NP PP frame.

(6) What will the children show Mary?

(7) ?Who will the children show the new toy?

Rejections	ULs			MLs
	Non-Chinese	Chinese	All	
6. (A)	33.3	12.5	23.5	6.7
7. (R)	88.8	32.5	64.7	53.3

NP and Wh-Movement from V NP NP

Below, we state the frequencies with which both NP- and Wh-movement from the double object subcategorization were rejected. The rationale for viewing grammars that reject movement from this subcategorization as more restrictive has been given in III and IV.

Rejections	ULs			MLs
	Non-Chinese	Chinese	All	
	33.3	12.5	23.5	6.7

Antecedent-Reflexive Pronoun Binding

With only few exceptions, the antecedent of a reflexive pronoun must c-command it.[10] This is not the case in (8), below, where the PP node dominating the antecedent, the NP Mary, does not c-command the PP node dominating the NP herself. A grammar that relaxes the c-command requirement on antecedent-reflexive pronoun binding is less conservative than one which enforces it.

(8) John will talk to Mary about herself.

Rejections	ULs			MLs
	Non-Chinese	Chinese	All	
8. (R)	70.0	62.5	61.1	33.3

Backward Anaphora

Flynn (1987) links the preference for forward anaphora (i.e., the antecedent precedes the pronoun) to a head-initial phrasal configuration. Thus, forward anaphora would be unmarked in English since the heads of phrases (e.g., N, Prep, V) precede their complements. Furthermore, processing considerations have led Frazier (1985) and O'Grady (1987) to propose that the unmarked state in general is for the antecedent to precede the pronoun. If the pronoun precedes the antecedent, then according to Reinhart's (1981) noncoreference rule, the antecedent cannot occur in the pronoun's c-command domain. This is, indeed, not the case

in sentences (9)-(11).

(9) Before she drove home, Susan did some shopping.
(10) John saw her while the girl ate lunch.
(11) The man that saw her knew Mary.

Rejections	ULs			MLs
	Non-Chinese	Chinese	All	
9. (A)	40.0	37.5	38.8	53.3
10. (A/R)	50.0	37.5	44.4	66.6
11. (R)	60.0	75.0	66.6	86.6
TOTAL	50.0	50.0	50.0	68.8

Null Subjects and Null Objects

No clear consensus appears to exist on whether the marked state is represented by languages allowing null subjects or by those which disallow them (See Gair 1988). Recent work by Rizzi (1986) does suggest that null objects represent the marked condition. Here, we will maintain that the grammar of English, which disallows null subjects and null objects, is the narrower one since the set of empty categories permitted in those positions is more restricted, there being no empty pronominal pro.[11] Hence, a grammar permitting empty subjects and objects is wider than one which rejects them.

(12) *Mary would never stay out late because must get up early.
(13) *After Tom was finished with his work, turned on the television.
(14) *After ate dinner, Susan went to a movie.
(15) *In this Canadian company is worked hard by everyone.

Rejections	ULs			MLs
	Non-Chinese	Chinese	All	
12. (R)	100.0	100.0	100.0	86.6
13. (R)	80.0	75.0	77.7	73.3
14. (R)	80.0	50.0	66.6	86.6
15. (R)	100.0	75.0	88.8	100.0
TOTAL	90.0	75.0	83.3	86.6

(16) *She looked for her key, but she couldn't find anywhere.
(17) *The man bought some flowers and gave to his wife.

Rejections	ULs			MLs
	Non-Chinese	Chinese	All	
16. (R)	80.0	62.5	72.2	60.0
17. (R)	80.0	25.0	55.5	40.0
TOTAL	80.0	43.8	63.9	50.0

Deletion in COMP

English permits free deletion of the complementizer that and relative pronouns in all relative clause types except when the relativized NP is the subject of the clause. As pointed out by Fodor (1978), this restriction has traditionally received a functional explanation -- the relative clause would invariably be misparsed as a main clause. Obviously, a grammar prohibiting this deletion is narrower than one that accepts it.

(18) *The man and woman live next door are very helpful.

Rejections	ULs			MLs
	Non-Chinese	Chinese	All	
18. (R)	90.0	0.0	50.0	60.0

The Superiority Condition

In English, Wh-movement must move the subject Wh-constituent to the specifier position in COMP when both the subject and the object are Wh-constituents. In other words, the highest constituent in the phrase structure tree (hence, Superiority Condition) must move. The Superiority Condition appears to be part of a general subject-object asymmetry which characterizes highly configurational languages like English and it is not observed by languages whose configurational status is less clear, e.g., German and Polish (cf. Haider 1985).

A grammar which enforces the superiority condition generates a set of sentences that stands in a proper subset relationship to the set generated by a grammar which does not conform to it.

(19) I can't remember who said what.
(20) *I forget what who said during the meeting.

Rejections	ULs			MLs
	Non-Chinese	Chinese	All	
19. (A)	10.0	25.0	16.6	13.3
20. (R)	90.0	75.0	83.3	60.0

Wh-Movement with Exceptional Case-Marking Verbs

A small group of verbs (e.g., want, expect, believe) allow infinitival complements with lexical subjects. Since the infinitive, being tenseless, cannot assign nominative case, and since these verbs disallow the complementizer for, the lexical subject must receive (accusative) case from the matrix verb. However, in order for these verbs to assign case, case-marking must take place across the IP-boundary:

[... [V [[NP to VP]]] ...]
VP CP IP IP CP VP

When the subject of the infinitive is questioned, it leaves a trace in the intermediate COMP position before moving to the sentence-initial COMP position. The matrix verb must therefore also govern the intermediate trace across the CP-boundary.

[WH [... [V [t [t to VP]]]]]
CP i VP CP i IP i IP CP VP IP CP

Here government exceptionally takes place across a maximal projection, CP. A grammar which has incorporated this marked extension of government is less conservative than one disallowing it.

(21) Who is he expecting to marry Susan?
(22) Who would you want to marry Susan?

Rejections	ULs			MLs
	Non-Chinese	Chinese	All	
21. (A)	20.0	25.0	22.2	6.7
22. (A)	40.0	50.0	44.4	26.7
TOTAL	30.0	37.5	33.3	16.7

Long Wh-Movement

Long Wh-movement refers to the extraction of a Wh-constituent from a tensed complement clause and its movement to the sentence-initial specifier position in COMP. Traditionally, analyses of long movement have assumed that the Wh

moves to the complement clause COMP position first, thereby avoiding a violation of the Subjacency Condition, which would ensue if it moved to the sentence-initial COMP position directly.

Many languages disallow long movement and it would appear that even some native speakers of English find it ungrammatical (Eta Schneiderman, p.c.). As with exceptional case marking, long movement is only felicitous with a small group of verbs (e.g., think, say, tell) which have the special ability to govern, across the CP boundary, the trace left behind in the intermediate COMP position. For this reason, Koster (1981) views long movement as marked.

(23) *Which glass did John say that would break easily? [12]
(24) Who does the teacher think will probably pass the exam?
(25) What did Tom say to you that Mary would like to read?
(26) What jokes did John tell his girlfriend he could not remember?

Rejection of long movement and correction to short

	ULs			MLs
	Non-Chinese	Chinese	All	
23. (R)	30.0	12.5	22.2	20.0
24. (A)	10.0	12.5	11.1	13.3
25. (A)	40.0	25.0	33.3	20.0
26. (A)	60.0	37.5	50.0	73.3
TOTAL (24)-(26)	36.7	25.0	31.5	35.6

Picture Noun Extractions

The final set of sentences involve Wh-extraction from so-called 'picture nouns'. All of the sentences contravene the Subjacency Condition in that the Wh-constituent crosses two bounding nodes, an NP and an IP. Sentence (27) is generally deemed to be grammatical, nonetheless.[13] Sentence 28, though similar, is ungrammatical due to the presence of the possessive NP, the artist's. It fills the specifier position and, being definite, makes the entire NP an island for purposes of extraction. Sentence (29) and (30) represent a violation of the Specified Subject Condition, which bars extraction from a subject NP. Grammars which reject these overgenerated extractions are more restrictive than grammars that accept them.

(27) Who did the artist sell a picture of?
(28) *Who do they admire the artist's painting of?
(29) *What do pictures of scare children?
(30) *What do stories about frighten children?

Rejections	ULs			MLs
	Non-Chinese	Chinese	All	
27. (A)	80.0	25.0	55.6	66.6
28. (R)	80.0	25.0	55.6	66.6
29. (R)	100.0	87.5	94.4	86.7
30. (R)	80.0	50.0	66.6	80.0
TOTAL (29)-(30)	90.0	68.8	80.1	77.8

Discussion

Chi-square tests reveal that none of the differences reaches statistical significance at the .05 level. However, it would be premature to accept the null hypothesis that there will be no difference between the unilingual and the multilingual group with respect to the conservatism of their judgments. In certain domains -- in fact, in a majority -- the MLs express less conservative judgments than the ULs. Table 3, below, indicates that the ratio of wider to narrower grammars for the ML group is 13:7 or, roughly 2:1. This ratio is maintained even if we exclude those domains where the margin of difference is only a few percentage points (VII(1); XI(1),(2); XII(3)).

The ULs express less conservative judgments in VI, VIII, and XII (1) and (2). A glance back at the groups' frequencies shows that the Chinese speakers exhaustively account for the low rejection rate of sentence (18), which was accepted by every Chinese speaker but rejected by nine of the ten non-Chinese ULs. Similarly, in domain XII, the Chinese-speaking group's low rejection rates of sentences (27), (28) and (30) depress the rate for the entire UL group, which otherwise would be equal to or higher than that of the MLs. The language-specific influence observable in domains XI and XII (as well as sentence (17)) suggests, then, that one or more contrasts between Chinese and English is responsible for the UL-ML difference. [14] This leaves domain VI, backward anaphora, as the one domain where the ULs, as a group, clearly have less restrictive judgments.

Turning to the MLs, their judgments are reflective of wider grammars in domains I, II, III, IV, V, VII(2), IX and X. Evidence that their grammars are more marked and prone to overgeneration appears in their higher acceptance of NP-movement and Wh-movement from both positions of the V NP NP subcategori-

Table 3. Overview of Unilinguals' and Multilinguals' Judgments

	Narrower Grammar	Wider Grammar	Margin of Difference
I. Verb-Object Adjacency			
1) V NP Adv. NP	UL	ML	19.2
2) V Adv. NP	UL	ML	10.0
3) V PP NP	UL	ML	5.5
II. Passive from V NP NP			
1) V t NP	ML	UL	(1.6)
2) V NP t	UL	ML	33.3
III. Wh-Movement from V NP NP			
1) V NP t	UL	ML	16.8
2) V t NP	UL	ML	11.4
IV. Wh and Passive Movement from V NP NP	UL	ML	16.8
V. Antecedent-Reflexive Binding	UL	ML	27.8
VI. Backward Anaphora	ML	UL	(18.8)
VII. Null Subject/Object			
1) Null subject	ML	UL	(3.3)
2) Null object	UL	ML	13.9
VIII. Deletion in COMP	ML	UL	(10.0)
IX. Superiority Condition (#20)	UL	ML	23.3
X. Wh-movement with ECM Verbs	UL	ML	16.6
XI. Long Wh-movement			
1) that-trace (#23)	UL	ML	2.2
2) (24)-(26)	ML	UL	(4.1)
XII. Picture-Noun Extraction			
1) from VP	ML	UL	(11.0)
2) Specified Subject Condition	ML	UL	(11.0)
3) Subject Condition (#29, 30)	UL	ML	2.3

zation. Coinciding with this is the higher acceptance of Wh-movement from 'the complements of exceptional case-marking verbs', also a marked structure. The higher incidence of nonobservance of the Superiority Condition and the Adjacency

Condition supports the claim for overgeneration as well.

Although the source of these overgenerations is susceptible to more than one interpretation, the assumption that more MLs than ULs lack an articulated syntactic VP in their grammars would unify these superficially unrelated cases of overgeneration. [15] As Koster (1981) and Haider (1985) have suggested, structural case-marking, in contrast to morphological case-marking, rests on an articulated syntactic VP. In the V NP NP subcategorization, the indirect and direct object must be part of a small VP (i.e., V') in order to receive case. Anything less than strict contiguity fails to satisfy the structural case-marking condition. It furthermore rules out passive movement from the nonadjacent NP position in the V NP NP subcategorization. The passivized verb, being syntactically intransitive, would fail to assign case to the adjacent NP. Also, the trace of the moved NP would not be properly governed, not being adjacent to the verb.

A syntactic VP is also implicated in the Superiority Condition. This condition depends on an asymmetric c-command relationship between the subject and the object. Without a VP, the asymmetry would disappear, as the subject and the object would then mutually c-command each other.

As already stated, one unexpected result concerns the higher rate of rejection by the MLs of the sentences containing backward pronoun anaphora. If backward anaphora places more of a processing burden on a performance system (Frazier 1985), we might expect MLs to be more accepting of it, given the superior processing resources that have been attributed to them (e.g., Nation and McLaughlin 1986). Interestingly, this domain, in which the MLs had the more conservative judgments, shares a common dimension with reflexive pronoun binding and the superiority condition, where the ULs had the more conservative judgments. Backward anaphora is only possible when the pronoun does not c-command the antecedent, as in sentences (9)-(11). Reflexive pronoun binding generally requires the antecedent to c-command the pronoun. The Superiority Condition requires the subject NP to Wh-move. But the subject invariably c-commands everything else in a phrase structure tree. Thus, even though the MLs expressed more conservative judgments on backward anaphora, these judgments dovetail with their less conservative judgments in the other two domains. The assumption that the c-command relationship plays a somewhat diminished role in their grammar formation elegantly accounts for the way in which their judgments pattern over these three domains.

Conclusion

Although between-group differences on the grammatical domains surveyed do not reach statistical significance, the 2:1 ratio of wider to narrower grammars for the ML group lends some tentative support to H_1 as does the higher ratio of acceptance which characterizes the ML responses. Since the informants participating in the study were adult-age learners, it is reasonable to conclude that the observed difference in conservatism is not due to maturational changes. There

is, then, some evidence for an inverse relationship between the conservatism of the learning procedure and the pool of linguistic knowledge available to it. Another consequence of this fund of linguistic knowledge cropped up in the greater heterogeneity of the MLs' judgments. Lastly, this investigation produced no evidence to suggest that MLs' putative superiority as language learners has anything to do with achieving more native-like intuitions. Of course, the support adduced for H_1 would still be compatible with the perception that MLs' 'pick up' languages with greater facility than ULs.

This initial investigation has generated hypotheses about the manner in which the learning procedure may be affected. We were able to recognize two (possibly three; see ftn.15) patterns in the judgments expressed by the MLs over a number of domains. Two grammatical constructs, c-command and the structure of the VP, appeared to interrelate the judgments, and it was proposed that they may be strongly or weakly articulated in the grammar that is constructed. For example, a weakly articulated c-command principle would confer greater prominence to the role of linearity in IL grammars (cf. MLs' judgments on backward anaphora). It is worth noting that the c-command relationship and VP structure relate to the broader dimension of hierarchical structure. Variation along this dimension in IL grammars does not appear implausible in light of proposals in the linguistic-typological literature that natural languages differ on the degree of hierarchical structure they exhibit (Mohanan 1982). Proposed answers to the question why a rich fund of prior linguistic knowledge would lead to less hierarchical structure in IL grammar construction will undoubtedly bear the stamp of speculation for some time to come.

NOTES

1. Slightly different versions of this chapter were presented at the Interdisciplinary Colloquium on Second Language Pedagogy, University of Ottawa, and the Boston University Language Development Conference, October 13-15, 1989.

2. The psychological plausibility of a learning procedure incorporating a markedness scale that selects the smallest language has come under attack from Fodor (1989). She argues that it is psychologically implausible for a learning procedure to compare languages extensionally by computing the sentence sets generated by values of a parameter. For our purposes it is important that subset learning results in the selection of the more conservative grammar. A grammar selection procedure that operates intensionally would still arrive at the same result (Fodor 1989:142)

3. The view that the learning procedure must formulate conservative grammars is contained in O'Grady's (1987:94) conservatism thesis and Pinker's (1987) conservatism hypothesis.

4. Subset learning predicts that tensed and infinitival clauses should form the binding domain for reflexive pronouns, which is the case in English. Korean allows a reflexive pronoun in a tensed or untensed clause to be bound by an antecedent outside the clause. In their English interlanguage the Korean speakers accepted binding by a nonclause-mate antecedent in untensed clauses but rejected it in tensed clauses.

5. Some experimental work which appears to corroborate this perception is reported in Nation and McLaughlin (1986) and Najak, Hansen, Kruger and McLaughlin (1990). In the first experiment

MLs were more successful at inducing an artificial grammar than ULs or bilinguals. In the second experiment MLs were found to be more flexible at deploying different learning strategies and superior at discovering the rules and instructing a naive subject on how to accomplish this rule discovery. These experimental tasks, though, are significantly different from learning a natural language.

6. A CLOZE is a stretch of prose from which every nth word has been excised. In restoring a word, candidates must draw on their knowledge of the topic, discourse constraints, syntax, the lexicon and morphology. This makes it a suitable measure of global proficiency (Oller 1979). Also, it correlates highly with tests of listening, speaking and reading.

7. The measurement of language distance from English took typological attributes and language family membership into consideration. Admittedly, this procedure was somewhat intuitive.

8. The instructions illustrated the difference between a possible and an impossible English sentence. In addition they clarified the notion of accepting/rejecting a sentence by 'feel'.

9. NS responses split evenly on one sentence, (10).

10. Van Riemsdijk and Williams (1986:141) define c-command as follows: A c-commands B if and only if the first branching node dominating A also dominates B, and A does not itself dominate B.

11. Small pro is the empty category corresponding to the phonologically overt referential pronouns he, she, etc.

12. Sentence (23) violates the empty category principle, as the trace left behind in the subject position of the embedded clause is not properly governed.

13. Kayne (1983) relates the grammaticality of sentences like (27), (29) and (30) to whether there exists, in the phrase structure tree, an uninterrupted and directionally consistent path from the gap position to the Wh-constituent. This is the case for the grammatical (27) but not for the ungrammatical (29) and (30).

14. Chinese possesses pro and would allow it in the object position of the second conjunct in (16) and (17). The other source of influence relates to the absence of syntactic Wh-movement in Chinese, which results in an elevated acceptance of the marked and overgenerated forms of Wh-movement.

15. In Zobl (1989) the higher rate of acceptance of passive movement of the direct object with the V NP NP frame is related to the similarly higher rate of acceptance of Wh-movement from the subject position of complements to exceptional case-marking verbs. In both constructions, government of the empty category is achieved by relaxing locality conditions on government. Thus, with passive movement we have [V NP t]; with exceptional case marking we have

[...V [t [t ...].
CP i IP i

It is somewhat surprising, therefore, that the MLs were not more accepting of long Wh-movement from tensed complements. On the assumption that what is really involved is a relaxation of locality conditions on case marking, this conflict in judgments would disappear. With long Wh-movement, case-marking remains local.

REFERENCES

Berwick, R. 1985. *The Acquisition of Syntactic Knowledge.* Cambridge, MA: MIT Press.

Birdsong, D. 1989. *Metalinguistic Performance and Interlinguistic Competence.* Berlin: Springer.

Bley-Vroman, R. 1989. What is the logical problem of foreign language learning: *Linguistic Perspectives on Second Language Acquisition* ed. by S. Gass and J. Schachter. Cambridge: Cambridge University Press.

Bley-Vroman, R., S. Felix and G. Ioup. 1988. The accessibility of universal grammar in adult language learning. *Second Language Research* 4.1-32.

Chomsky, N. 1981. *Lectures on Government and Binding.* Dordrecht: Foris.
Cohen, A. 1983. *Testing Language Ability in the Classroom.* Rowley, MA: Newbury House.
Cook, V. 1988. *Chomsky's Universal Grammar.* Oxford: Basil Blackwell.
Culicover, P. and W. Wilkins. 1984. *Locality in Linguistic Theory.* New York: Academic Press.
Felix, S. 1988. UG-generated knowledge in adult second language acquisition. *Linguistic Theory in Second Language Acquisition* ed. by S. Flynn and W. O'Neill. Dordrecht: Kluwer.
Finer, D. and E. Broselow. 1986. L_2 acquisition of reflexives. *NELS* 16.
Flynn, S. 1987. *A Parameter Setting Model of L_2 Acquisition: Experimental Studies in Anaphora.* Dordrecht: Reidel.
Flynn, S. 1991. Age-dependent effects in language acquisition: an evaluation of 'critical period hypotheses.' *Point-Counterpoint* ed. by L. Eubank. Philadelphia: John Benjamins.
Fodor, J.D. 1978. Parsing strategies and constraints on transformations. *Linguistic Inquiry* 9.427-473.
Fodor, J.D. and S. Crain. 1987a. Simplicity and generality of rules in language acquisition. *Mechanisms of Language Acquisition* ed. by B. MacWhinney. Hillsdale, NJ: Lawrence Erlbaum.
Fodor, J.D. 1989. Learning the periphery. *Learnability and Linguistic Theory* ed. by R.J. Matthews and W. Demopoulos. Dordrecht: Kluwer.
Frazier, L. 1985. Syntactic complexity. *Natural Language Parsing* ed. by D. Dowty, L. Karttunen and A. Zwicky. Cambridge: Cambridge University Press.
Frazier, L., C. Clifton and J. Randall. 1983. Filling gaps: decision principles and structure in sentence comprehension. *Cognition* 13.187-222.
Gair, J. 1988. Kinds of markedness. *Linguistic Theory in Second Language Acquisition* ed. by S. Flynn and W. O'Neill. Dordrecht: Kluwer.
Gass, S. 1979. Language transfer and language universals. *Language Learning* 29.327-344.
Gass, S. 1983. The development of L_2 intuitions. *TESOL Quarterly* 17.271-291.
Haider, H. 1985. The case of German. *Studies in German Grammar* ed. by J. Toman. Dordrecht: Foris.
Kayne, R. 1983. Connectedness. *Linguistic Inquiry* 14.223-249.
Kellerman, E. 1978. Transfer and non-transfer: where are we now? *Studies in Second Language Acquisition* 2.37-58.
Koster, J. 1981. Configurational grammar. *Levels of Syntactic Representation* ed. by R. May and J. Koster. Dordrecht: Foris.
Larsen-Freeman, D. 1983. Second language acquisition: getting the whole picture. *Second Language Acquisition Studies* ed. by K. Bailey, M. Long and S. Peck. Rowley, MA: Newbury House.
Liceras, J. 1988. L_2 learnability: delimiting the domain of core grammar as distinct from the periphery. *Linguistic Theory in Second Language Acquisition* ed. by S. Flynn and W. O'Neill. Dordrecht: Kluwer.
Mazurkewich, I. 1984. Dative questions and markedness. *Universals in Second Language Acquisition* ed. by F. Eckman, L. Bell and D. Nelson. Rowley, MA: Newbury House.
Mohann, K.P. 1982. Grammatical rations in Malayalam. *The Mental Representation of Grammatical Relatives* ed. by J. Bresnan. Cambridge, MA: MIT Press.
Najak, N., N. Hansen, N. Krueger and B. McLaughlin. 1990. Language-learning strategies in monolingual and multilingual adults. *Language Learning* 40.221-244.
Nation, R. and B. McLaughlin. 1986. Novices and experts: an information processing approach to the 'good language learner' problem. *Applied Psycholinguistics* 7.41-56.
O'Grady, W. 1987. *Principles of grammar and learning.* Chicago: Chicago University Press.
Oller, J. 1979. *Language Tests at School: A Pragmatic Approach.* London: Longman.
Pinker, S. 1987. Productivity and conservatism in language acquisition. *Language Learning and*

Concept Acquisition ed. by W. Demopoulos and A. Marras. Norwood, NJ: Ablex.
Reinhart, T. 1981. Definite NP anaphora and c-command domains. *Linguistic Inquiry* 12.605-635.
Riemsdijk, H. van and E. Williams. 1986. *Introduction to the Theory of Grammar.* Cambridge, MA: MIT Press.
Rizzi, L. 1986. Null objects in Italian and the theory of pro. *Linguistic Inquiry* 17.501-557.
Rutherford, W. 1988. Grammaticality theory and L_2 acquisition. *Linguistic Theory in Second Language Acquisition* ed. by S. Flynn and W. O'Neill. Dordrecht: Kluwer.
Stowell, T. 1981. Origin of phrase structure. Unpublished Ph.D. Thesis. MIT.
Wexler, K. and M. Manzini. 1987. Parameters and learnability in binding theory. *Parameter Setting* ed. by T. Roeper and E. Williams. Dordrecht: Reidel.
White, L. 1986. Markedness and parameter setting: some implications for a theory of adult second language acquisition. *Markedness* ed. by F. Eckman, E. Moravcsik and J. Wirth. New York: Plenum Press.
White, L. 1987. Implications of learnability theories for second language learning and teaching. Paper presented at the *AILA* Congress, University of Sydney, August 1987.
White, L. 1989. *Universal Grammar and Second Language Acquisition.* Philadelphia: John Benjamins.
Zobl, H. 1980. The formal and developmental selectivity of L_1 influence on L_2 acquisition. *Language Learning* 30.43-57.
Zobl, H. 1988. Configurationality and the subset principle. *Learnability and Second Languages* ed. by J. Pankhurst, M. Sharwood Smith and P. van Buren. Dordrecht: Foris.
Zobl, H. 1989. Grammaticality judgments of unilingual and multilingual language learners. Paper presented at the 13th Boston University Conference on Language Development, October 13-15, 1989.

Language Transfer and Fossilization: The Multiple Effects Principle

Larry Selinker and Usha Lakshmanan

This chapter attempts to unite the second language acquisition concepts of language transfer and fossilization. For the longest time, this has clearly been a priority[1].

The long term persistence of plateaus of non-target-like structures in the interlanguage (IL) of non-native speakers (even those who are very fluent speakers of the L2) has been called *fossilization* (Selinker, 1972; Selinker and Lamendella, 1978) and has been frequently discussed in the SLA literature. For example, Flynn and O'Neil, in their useful introduction (1988, 19) state that "...we are yet unable to explain the nature of plateaus in learning with adult learners often reported in the literature..." They then go on to produce a series of important researchable questions, such as:

> Why do some adults, beyond simply phonological problems, seem never to fully master the L2?
>
> Can these plateaus be explained in terms of a lack of exposure to the essential data base?
>
> Does this suggest an interaction with other domains of cognition... (and)...something quite deep about the nature of UG?

Finally, they produce a question basic to the nature of human cognition:

> Is it possible to argue that there is an independent domain specific faculty for language while at the same time maintaining that it is so inextricably tied to other aspects of cognition that it is difficult to affect one area without affecting many others?

Such questions are linked to one's definition of the concept of fossilization. *The Unabridged Random House Dictionary* defines *fossilize* in the following way:

> *Ling.* (Of a linguistic form, feature, rule, etc.) to become permanently established in the interlanguage of a second-language learner in a form that is de-

> viant from the target-language norm and that continues to appear in performance regardless of further exposure to the target language. (p. 755)

Even with this useful definition now widely available, it is important to note that the exact nature of this phenomenon is still unclear. Specifically, we still do not know why certain linguistic structures become fossilized while others do not. And on a prior level, we do not now have a theory-driven list of potential fossilizable IL structures. It is especially here that we feel we can make progress.

In this chapter, we begin with Orwell's Problem and propose that the *multiple effects principle* (MEP) is a partial answer to the problem as it applies to the second language acquisition (SLA) context. We consider Orwell's problem to be very important in understanding SLA thought. Hale (1988) points out that there is in SLA an important element of what Chomsky (1986), in political debate, has referred to as Orwell's problem. This is basically the opposite of the well-known and much studied Plato's problem in child-language acquisition, namely: How is it that we know so much despite so little evidence available to us? Orwell's problem, on the other hand, relates to the question as to why we know so little despite so much evidence which is available to us. Hale specifically raises the following in the context of SLA: Why, where it is so, do non-target-like parameter settings persist in the grammars of fluent L2 learner despite the ample evidence for the correct parameter setting in the L2.

We first define the MEP as follows:

1. The Multiple Effects Principle A (MEP):
   When two or more SLA factors work in tandem, there is a greater chance of stabilization of interlanguage forms leading to possible fossilization.

Concerning various possible SLA factors, we suggest that language transfer is a central one and that there is a weak form and a strong form to the MEP[2]:

2a. The Multiple Effects Principle Bi: Weak form:
Language transfer is a **privileged** co-factor in setting multiple effects.

2b. The Multiple Effects Principle Bii: Strong form:
Language transfer is a **necessary** co-factor in setting multiple effects.

That is, the strong form of the MEP specifically claims that whenever the MEP is applicable, one of the SLA factors will **always** be language transfer.

One of our background goals is to integrate UG and contextually-based SLA; thus, we here present a pedagogical corollary to the MEP:

(2c) The Multiple Effects Principle C: pedagogical corollary:
Apparently fossilized structures will not become open to destabilization through consciousness raising strategies when multiple effects apply.

This corollary is discussed in detail in Selinker and Lakshmanan (1990); suffice it to say here that the crucial IL data is often contextual, gathered in the context of classroom SLA and from written technical IL (cf. also, Selinker and Douglas, 1989 and 1991). Thus, one of our underlying goals must be to link, as clearly as possible, several different forms of facts: UG-related IL facts with contextually-related IL facts; both of these with pedagogically-generated IL facts; and all of these with an integration of oral and written IL data.

In this chapter we examine a wide range of data reported in studies based on UG and non-UG frameworks[3]. We conclude that in many instances of apparent fossilization, the MEP appears to be at work. Thus, the link of fossilization with language transfer is this: it is our hypothesis that in every case where the MEP is at work, language transfer appears to be involved, that is, the strong form of the MEP.

It is important to note at the outset, that regarding the concepts of language transfer and fossilization, there is in the literature an important imbalance. Looking at language transfer, one sees over the years, a series of suggested generalities and principles, from Andersen's (1983, 1989) transfer to somewhere principle to Eric Kellerman's (1983) psychotypology principles to the many discussions of the relationship of language transfer to universal grammar to Gass' conclusion (1984), returning to the earlier Weinreich position (1953) that transfer is a selection process. To show continuity, Haugen claims (as reported in Weinreich, 1953 and discussed in Selinker, 1991) that this principle of transfer as a selection process goes back to Whitney's 1881 seminal paper.

In contrast, if one looks at the literature on fossilization, one sees little serious attempt at suggesting constraints and principles. Given the historical SLA record, we have asked ourselves if it might be the case that **the only principles** one could suggest about fossilization involve language transfer. It turns out that, historically, one can read that position into the most seminal discussion in second language acquisition: Uriel Weinreich's 1953 *Languages in Contact*. Weinreich actually talks about "permanent grammatical transfer" and gives numerous examples. In 1961, Nemser in the first experimental testing of contrastive linguistic claims discusses "..the formation of permanent intermediate systems and subsystems.." in the English of Hungarian speakers. With such clear early results (discussed in detail in Selinker, 1991), why have we not

had progress in understanding the linkage of language transfer and fossilization?

A second strand in the story which links transfer and fossilization, begins with the student paper done at Edinburgh in 1969 by Mahavir Jain, a rewritten version appearing as Jain (1974), the last paper in the important *Error Analysis* book edited by Richards (1974). In working on Hindi English, what Jain concluded was that there are stronger stabilization tendencies in this IL when two processes work in tandem, in his case one of them being language transfer and the other being certain input.

A third strand begins with what we noticed in the early French immersion interlanguage studies, where Selinker, Swain and Dumas (1975) concluded with a general hypothesis which stated:

> when more than one strategy intersects in second language acquisition, there will be more power or stability in the resultant interlanguage. Selinker, Swain & Dumas (1975, 150)

In the 1970's Selinker pursued, without success, a **power theory of math** that would cover what we thought we knew about the concept of **power** in determining IL. In this light, there is in fact a recent suggestion by MacWhinney (pc) that multiple effects leading to fossilization can be reinterpreted in terms of the competition model notion of cue strength.

The theme of multiple effects is picked up in a French immersion paper by Harley & Swain (1984). They studied the stabilization of an interlingual identification of a native language pronoun, on the one hand, with a target language pronoun PLUS auxiliary, on the other. To use a Martinet conception (Introduction to Weinreich, 1953), **false equivalence** was attributed by Harley and Swain to two factors working in tandem, one of them being language transfer. Another key sentence in the early French immersion work (Selinker, Swain and Dumas, 1975) is an infamous interlanguage one: *Il veut moi de dire francais a il.* What we would want to know is if this type of structure persists in French immersion IL; we have a specific prediction in terms of the MEP which we discuss below in regards to some thoughts about Indian English.

A fourth strand in the theoretical story involves a number of researchers--Wode (1978), Zobl (1980, 1982, 1983) and Andersen (1983, 1989) for example--who all conclude that language transfer works in tandem with universal processes in stabilizing IL form, at the very least in bringing about a delay or a plateau where affected learners get stuck longer than those producing a similar form but with no possible language transfer effects involved. [These studies are clearly summarized in Larsen-Freeman and Long, 1991, 96-98.]

A more recent strand appears in the Hale material mentioned above in connection with Orwell's problem. Hale's example concerns a well-known

Italian theoretical linguist who must know so much about the structures involved, apparently having written on this problem. The linguist in question produces sentences such as (3a):

(3a) This allows /e/ to conclude that LF movement obeys subjacency after all. (Hale 1988, 32) [where /e/ equals the hypothesized empty category]

This sort of sentence is produced for the intended target language sentence: *This allows us/one to conclude..* Hale concludes that this speaker despite all that he knows persists in:

> the use of "small pro" object (with arbitrary reference)...Such usage often persists despite the speaker's conscious recognition of the position of English in relation to the parameter recently discussed in detail by Rizzi (1987). (Hale 1988, 32)

Hale then makes a most important fossilization point, integrating it with types of competence, which in turn becomes a central cognitive point about types of knowledge:

> Examples of this sort suggest that certain L1 parameter settings may be extremely difficult to eradicate from an acquired L2, at least at the level of integrated linguistic competence (as opposed to conscious intellectual understanding of surface grammatical facts)...(ibid)

Hale concludes that this may be particularly so in the case of parameters "whose effects are diffuse within the grammatical system as a whole...". We see at work then both transfer (from Romance L1) and UG effects as in the following examples heard on National Public Radio:

(3b) How come Mrs. Thatcher is not condemning Yizhak Shamir and she is saying /e/ for Sadam Hussein? (NPR, Jordanian)

(3c) Like with any other army, the politicians, they are /e/ to have to stand up for their responsibilities (/e/ = the ones who?) (E. German military officer on people killed at The Wall).

Sentence 3c appears to us particularly interesting. We see here tenseless clauses in IL English, something we have experienced many times with very advanced non-native speakers of English[4]. In this case, the first tenseless clause, *to have* seems non-target-like, while the second one *to stand up for* seems target-like, though importantly BOTH seem very precise, even though one is more target-like than the other. One analysis, which we favor, is as follows: In TL terms, we interpret *they are /e/ to have...* as *they are the ones who*

have.... If we analyze that as a failure to relativize in subordinate clauses, we get an untensed clause as **the default IL strategy**, which we find also in 3d:

3d. If everything works out the way I hope it to work, I would be able to cover your expenses from X and back.(e-mail message, Finnish English)

Here we find a most advanced IL speaker producing a written untensed clause in a subordinate clause. Since we continually find this to be the case[5], we can begin to answer one of our earlier questions: we have in tenseless clauses and empty categories two structures as candidates for **objects of fossilization** (see Selinker and Lamendella, 1978). So, methodologically, one place to look for fossilizable structures is when the researcher sees tenseless clauses and empty categories, especially in very advanced ILs, and our explanations begin with seeing if the MEP applies.

Sentence 3d is interesting in another way. The writer did not produce *would* in the *if* clause. Kellerman's studies of the use of *would* by Dutch speakers, as in 4, come into play at this point:

4. Dutch learners of English:
If I would be able to live all over again, I would be a gardener. (Kellerman, 1989).

Kellerman sees this placing of *would* by even very advanced Dutch speakers of English, as occurring because of a **conspiracy**[6] of two factors:

(i) a NL factor, where, due to some vagaries of Dutch structure, there is a tendency in IL to mark the form of the tense.

(ii) symmetry of structure, i.e. *would* in both clauses.

We see Kellerman's results as occurring because of three effects: NL influence, symmetry of structure and, additionally:

(iii) what we call **affect**, for lack of a better word, i.e. trying to make the TL better or more precise. [We return to this point later][7].

Importantly, we see the factor of affect working in a number of studies: we presented one in Selinker and Lakshmanan (1990); cf. 2c above where we presented a pedagogical corollary to the MEP, namely that:

> Apparently fossilized structures will not become open to destabilization through consciousness raising strategies when multiple effects apply.

In Selinker and Lakshmanan (1990), we presented a series of studies which concerned foreign students writing academic English IL. One case con-

sisted of the need in written IL by the learner to disagree with an argument. One consistent factor was what we labelled affect: both an Arabic and a Chinese student insisted that a structure from oral English (specifically, the rhetorical question) was appropriate in a written technical text. This involves another kind of transfer which has been studied (Selinker and Douglas, 1989, 1990) in the context of international teaching assistants in the U.S.: internal-IL transfer, i.e. where we conclude that the learner is transferring to their written IL, stabilized forms from their spoken IL[8]. We now turn to some examples of additional potential candidates for fossilization. First, let us consider IL morphology. Long ago, Weinreich (1953) concluded that people do not transfer the entire/full morphology of the native language, that transfer of NL syntax occurs more than does NL morphology. Our hypothesis is that IF native language morphology is transferred, it happens only when the MEP is at work. Our prediction is that in such situations, IL morphological forms will tend to fossilize. The data given in (5), which were originally reported in Duskova (1984) and later discussed in Gass (1988), offer some support for our predictions concerning fossilization of IL morphology.

(5)

NS (Czech)	IL (Russian)	NS (Russian)	
učitelé	učitele	učitelja	'teachers'
pracovnice	rabotnice	rabotnicy	'workwomen'
tisíce	tysjače	tysjači	'thousands'
vznikl/ vzniknul	vozniknul	voznik	'arose'
jez, jezte	ez, ez'te/ es', este	eš', eš'te	'eat' (imp.)

(Duškova, 1984)

To state briefly, Duškova (1984) found that Czech speakers acquiring Russian transferred the bound morphology from their NL to their IL Russian while Czech speakers acquiring English did not produce a parallel transfer. Although Duškova is silent about the likelihood of such IL forms fossilizing, we believe that such instances of IL bound morphology are likely to persist. This is because we think that in the bound morphology of IL Russian, the MEP is operative. We can identify at least three interacting factors:

(i) transfer of the bound morphology from the NL.

(ii) the L2 learners' perception of Russian as a language that is very similar to their NL, Czech (see Gass (1988) for a similar view that the minimal distance principle may be at work here), and

(iii) the existence of a fair number of cognate words (shared vocabulary) in Russian and Czech -- in numerous cases, the free morphemes in Czech and Russian are identical.

Furthermore, we also conclude that this is a clear example of the transfer to somewhere principle referred to above, i.e. transfer to the cognate Russian forms. Note that we see no transfer to Czech English, because there is no somewhere to transfer the forms to[9].

A second example concerns subject pronouns in IL grammars. It has been commonly observed that Spanish speakers acquiring English as L2 tend to drop subject pronouns. This appears to occur most often in copula/ auxiliary *be* constructions (i.e. *is* contexts). In most cases the subject pronoun concerned is usually *it* (referential/ expletive).

Omissions of the subject pronoun *it* have been observed to persist. In other words, such null expletive/referential *it* utterances are candidates, we predict, for stabilization leading to possible fossilization. This appears to be true not only for adults but also for children, although in the case of the latter, the situation becomes radically different in terms of outcome: stabilization of such IL forms may NOT lead to fossilization. Lakshmanan (1989) has shown that the *is* context is a strong predictor for the omission of subject pronouns in the IL of Marta, a four year old native speaker of Spanish who acquired English as L2 (For a similar view see Cancino, Rosansky and Schumann 1974). The relevant data is presented in (6) below:

6. Is mine.
Is basketball?
Is going in the floor.
No is wet.
No is going to rain there in Puerto Rico.
/Iss/ the bear.
(Cancino, Rosansky, and Schumann 1974; Lakshmanan 1989)

The relationship between *is* contexts and null subjects appears to be the result of three factors:

(i) interlingual identification (Weinreich, 1953 as discussed in Selinker, 1991) in terms of phonological matching (i.e. English *it's* is perceived as *is*, and *is* in turn is matched with the Spanish copula *es* leading to a three-way association between *it's*, *is* and *es*).

(ii) the L2 learner's perception (on the basis of the phonological association) that English is like Spanish (i.e. that it allows null subjects).

(iii) language transfer (i.e. the learner drops subjects in *is* contexts).

At a later stage, when *it's* is correctly analyzed as consisting of two elements, *it* and *is*, the referential/expletive *it* begins to be supplied where required. Although Lakshmanan (1989) does not state that the MEP is at work, the data from Marta's IL strongly suggests that the MEP may play a role in the omission of English subject pronouns by native speakers of Spanish. The reason why adult native speakers of Spanish may **continue to omit** subject pronouns may be because of a **possible** failure in perceiving that *it's* consists of two elements--*it* and *is*. In other words, the MEP will continue to be operative leading to fossilization of such IL forms.

A similar phenomenon (i.e., dropping of the subject pronoun *it* in *is* contexts) has also been observed in the case of French speakers acquiring English as L2 (see Zobl 1984; Tiphine 1983; Lakshmanan 1989) even though French, unlike Spanish, is not a null subject language. Again we hypothesize that this tendency is probably the effect of the MEP. Let us consider the case of Muriel, a four year old native speaker of French who acquired English as L2. Data on Muriel was first reported in Gerbault (1978) and more recently in Lakshmanan (1989). Lakshmanan (1989) showed that subject omission by this L2 learner occurred only in *it is* contexts where *it* is either a referential or expletive subject. Lakshmanan argued that omission of the subject pronoun *it* is probably the result of Muriel's attempts to analyze *it's*. *It's* first occurs in samples 1 and 2.

(7)

a. Is very good	b. This is/ This	c. Is just a picture of it.
Iste mine.	ist/ Thist/	Ya, because is here.
Ist going to sleep.	This iste	Is going the other way.
	He'st a bad boy.	I know is some more.
		But is not a tree, I know.

(Gerbault 1978; Lakshmanan 1989)

In sample 3, *it's* is replaced by *ist*, which may be the result of a phonological interference from French since French has the /st/ combination but not the /ts/ combination (for a similar view see Gerbault 1978). In sample 4, *is* and *iste* are added and they coexist along with *ist* until sample 9 (see 7a above). As Gerbault (1978) and Lakshmanan (1989) observe, *ist* and *iste* appear to be allomorphs of *is*, in the IL, as they occur in *this is* constructions and with the pronoun *he* (see 7b above). *Ist* and *iste* do not occur from sample 9 onwards. Until the very end, only *is* is present and in nearly all cases the subject *it* is omitted as shown in (7c). Again we see that there are at least two factors at work:

(i) language transfer (specifically phonological interference from the L1: /ts/ combination is not present in French).

(ii) morphological factor (failure on the part of the learner to correctly analyze *Its* as consisting of *it* and *is*).

The next example concerns a property that is peculiar to English when compared to many other languages- - that verbs such as *want* are Exceptional Case Marking (ECM) verbs, i.e., they can license a lexical NP in the subject position of their infinitival complement. For example, in a *sentence such as I want [John to go there],* the subject of the infinitival complement, cannot get Case (nominative Case) from INFL since INFL is [-tense]. The verb *want* treats the subject NP *John* as its object and assigns Case to it.

If *John* were not assigned Case (i.e. abstract Case), this would violate the Case Filter requirement given below:

> CASE FILTER: Every phonetically realized NP must be assigned Case (abstract Case). (Chomsky, 1986, p. 7)

We claim here that the ECM property of verbs such as *want* will be difficult to learn (for a similar view, see Felix and Weigl, 1991). Once again, as in the case of the examples discussed earlier, we think that the MEP is responsible for the learnability problem. One bit of evidence concerns Hindi speakers of English. Some Hindi speakers of English[10]--though not all--(even those who are fairly fluent in the language) have been observed to produce structures as in (8a).

8a. I want that he go there. or
I want that he goes there. (Hindi English)

The verb *want* in their L1 is a control verb (i.e. it can take an infinitival clause as its complement, where the subject is an empty category, viz. PRO as in English *I want [PRO to go there]*). However, unlike English, *want* in Hindi, cannot license a lexical NP in the subject position of its infinitival complement. For example, in the Hindi translation of the English, *I want him to go there*, the complement of the Hindi *want* has to be [+tense] and not [-tense]. The lexical NP in the subject position of the complement receives Case (Nominative case) from the [+tense] INFL. Further, the complementizer must be overtly present. Utterances such as (8a) suggest that L1 transfer is probably at work. A further prediction is that utterances as in (8a) will stabilize leading to possible fossilization as there are at least three factors involved.

As mentioned earlier, one factor is that of language transfer. Unlike English, the L1 does not have ECM verbs. So the L1 prevents these learners from treating *want* in English as an ECM verb. Further, the complement of the verb *want* in IL utterances as in (8a) is [+tense] and in addition, the complementizer *that* is usually present in such IL sentences. The second factor is the UG factor. Since at the stage when they produce utterances as in (8a), these speakers do not know[11] that *want* in English is an ECM verb, it would

violate the Case Filter principle to have a lexical NP in the subject position of the infinitival complement. As stated earlier, a lexical NP in the subject position of [-tense] clause cannot normally receive Case (except in ECM contexts). This would predict that utterances such as *I want John to go there* would not occur in these learners' English ILs. Instead, what we find occurring are utterances such as (8a) which are fully within the confines of UG. A third factor concerns positive evidence from the target language--specifically the existence of verbs which are semantically similar to *want* such as *hope* and *wish*. Unlike *want*, verbs such as *hope* and *wish* cannot license a lexical NP in the subject position of their infinitival complement. If there is a lexical subject, then the complement clause must be [+tense], as in (8b) below:

(8b) I hope (that) he goes there.

Further, it is our hypothesis that speakers say (8a), in the English IL of these adult L2 learners, the complementizer *that* is likely to be treated as obligatory overt, i.e. as it is in their L1, and not optional, which is the case in native English. Such speakers, therefore, would have to say (8c):

(8c) I hope that he go there. or
I hope that he goes there.

with an obligatory complementizer **that**.

Let us now turn to the acquisition of ECM verbs in child second language acquisition. A question that may be posed in the context of child SLA is whether structures as in (8a) will also occur in the IL of children learning English as a second language and if so, whether such structures are likely to stabilize leading to possible fossilization. What we think is that the MEP is operative in the case of structures equivalent to (8a) in the IL of child L2 learners. But in contrast to what we proposed in the case of the adult L2 speakers, in the case of child L2 speakers, we predict that the MEP will result in stabilization leading to possible **development** (and not fossilization). Lakshmanan (1991a, 1991b) discusses relevant data from three child L2 learners of English: Marta and Cheo (two native speakers of Spanish) and Muriel (a native speaker of French). Lakshmanan (1991a) reports that there is a common pattern for all the three children. While relevant data[12] from all the three learners are presented below, we will for the purposes of this chapter, focus on the data from Marta.

At the stage when Marta produces structures as in (9a), she also produces structures as in (10a) and (11a).

(9a) MARTA	b. MURIEL
You want to sing it?	I wanna do the number
She don't want to play with.	I want to wash my hand.
What do you want to show me?	You want to help me?
I want to get a taxi.	I don't want to color in that.

If somebody wants to get them. We don't want to do it.
I want to put it myself. What do you want to be?

9c. CHEO
I want some
He don't want any, he don't want any.
I want to make...
And you don't wanna live right here because he broke the door.
You wanna see my hand?
Because he don't wanna have car.
I want to go today. But I want to give you some more lunch.
But first I want to hear that.
(Lakshmanan 1991)

10a. MARTA
I go to say one thing, you want to I put here in this little paper?

10b. MURIEL
You want me I love you?
I don't want to everybody finish.
You want to I play?
You want to I paint?
You wanted to I tell what to put?
(Lakshmanan 1991)

11a. MARTA
What you want I put here?
I don't want they go away.
Because I don't want he hides there.
D'you want I tell you?
Because I want the other stick go in there and then come out like a magic.

11b. MURIEL
But I don't want everybody's finished.
I want to finish first, huh?

11c. CHEO
You want I hold it with something?
No, I want you show me first.
I don't want you go home.
I want you go home tomorrow.
(Lakshmanan 1991)

The data in (9a) suggest that she knows that *want* is a control verb in English but she does not yet know that it is also an ECM verb. (10a) is interesting because it suggests that the *to* infinitival particle may have been reanalyzed as a complementizer. Further, we notice that structures such as *You want I to go there?* are absent. Such structures would be ruled out by UG. Structures such as (10a) do not persist. What persists are structures such as (11a). There are two points to be noted about the data in (11a). First, we notice that the complementizer *that* is not present. Second, we notice that the

lexical subject of the complement clause bears the nominative case. This can be easily seen since in most cases the lexical subject is a pronoun.

At the stage when Marta produces utterances such as in (11a), she can make a distinction between nominative and accusative pronouns. What we think is that the complement clause is [+tense]. This would explain the use of the nominative form of the pronoun in the subject position of the embedded clause. Utterances as in (11a) are fully within the confines of UG. Marta's L1 viz., Spanish, does not have ECM verbs. However, in Spanish, the complementizer (Spanish equivalent of *that*) must be overtly present. As stated earlier, the complementizer *that* is never present in utterances as in (11a). This phenomenon is also true of the other two child L2 learners. This suggests an important difference between the child L2 data and the adult L2 data. In the case of the former, *that* is never overtly present. But to our knowledge, in the case of the latter, the complementizer *that* is rarely absent. It may be that for child L2 learners only two factors viz., UG and TL facts, are at work while the factor of language transfer is absent. If language transfer is considered as a necessary cofactor (or at the very least, a privileged co-factor), then the non-operation of language transfer suggests that although structures as in (11a) may stabilize, they will not fossilize. So, in the case of the child L2 learners we have a scenario where the MEP results in stabilization leading to possible development. Towards the end of the data collection, in sample #15 (to be exact), Marta finally appears to have figured out that *want* is an ECM verb-this is suggested by the example shown in (13).

(13) Because I don't want him to bother us. (Marta)
I don't want you to see this on the xxx (Muriel)
(Lakshmanan 1991)

Another example concerning the acquisition of complements of verbs such as *want* comes from French immersion studies reported in Selinker, Swain and Dumas (1975) and mentioned above. In this case, the learners are English speaking children acquiring French as the L2. Selinker, Swain and Dumas report that these child L2 learners of French produce forms such as (14):

(14) Il veut moi de dire francais a il.
He want me to speak French to him.
(cf: Il veut que je lui parle francais)
(Selinker, Swain and Dumas, 1975)

Data as in (14) suggest that English speaking children treat the French verb *vouloir* as an ECM verb although French does not have ECM verbs. In other words, they appear to have transferred the ECM property of *want* (in English) to the French L2. Notice that IL structures as in (14) are fully within

the confines of UG. Since for the learners at this stage, *vouloir* is an ECM verb, the lexical subject of the infinitival complement can be assigned Case by the matrix verb and there is no violation of the Case filter. We expect that IL structures as in (14) will stabilize since once again there are two factors at work: L1 transfer and UG. But will stabilization of such forms lead to fossilization? This might be a possible outcome since the absence of structures in the target L2 will have to be noticed.

It is generally assumed in the acquisition literature that it is considerably more difficult to notice the absence of something than the presence of something[13]. However, it is possible that in more natural situations i.e. where French is acquired in the country where it is spoken, and where there is more sustained exposure to the target language input, the absence of structures such as (14) may be noticed (i.e. indirect negative evidence may be available) since the learners will consistently hear only forms such as *Il veut que je dises ça* and they will never hear forms such as *Il veut moi de dire ça.*

Our final example concerns the adjacency principle which relates to Case assignment (Chomsky, 1986; Stowell, 1981). The adjacency principle is a parameterized principle which is associated with two values which are in a subset/superset relationship. The subset value, which is consistent with the smallest grammar, is [+strict] adjacency; this is instantiated in languages such as English. The superset value, which is consistent with the largest grammar, is [strict] adjacency; this can be observed in French, Hebrew and many other languages of the world. Importantly, in English, for example, no element can intervene between the verb (the case assigner) and its object (the case assignee) and this explains the ungrammaticality of structures such as (15) where the adverb intervenes between the verb and the object. In French, on the other hand, while the equivalent of (15) would be ungrammatical, French also permits certain other adverbs to intervene between the verb and the object as in (16).

15. *I drank carefully the coffee.

16. J'ai mangé rapidement le diner.

White (1989) reports that native speakers of French acquiring English as L2 accept sentences in English which violate the [+strict] adjacency condition as in (17) below. In other words, they transfer the French value of [-strict] adjacency to English. But since this represents the superset value, it would not be possible to arrive at the subset value (i.e. the English value) on the basis of positive evidence alone (Berwick, 1985). A conclusion that White draws on the basis of her results is that either the subset principle is not operative (since the initial assumption of these learners is not consistent with the smallest or most

restrictive grammar) and this leads to language transfer or that language transfer leads to the failure of the subset principle.

(17) Tony crossed carefully the street.
Jane cooked yesterday steaks for supper.
Diana put on the table some flowers.
(White 1989)

In a much earlier study, Selinker (1966) also reported on similar problems experienced by native speakers of Hebrew who were acquiring English as the L2. These learners frequently produced utterances such as (18a) and (18b) which, reframing this problem in more current terms, suggests that Hebrew speakers who do this also fail to realize that English requires [+strict] adjacency.

(18a) I like best Paul Anka Elvis Presley.

(18b) I like English and geography best.
(Selinker 1966)

What we think is going on is that in the case of IL forms such as (17) and (18), the MEP is operative. At least three factors may be identified. One factor, viz., the privileged/necessary factor is that of language transfer. A second factor relates to the non-operation of the subset principle. A third factor concerns the TL facts. The evidence from the target language may be misleading. While the adverb is barred from intervening between the verb and the object, there is no similar restriction on its occurrence in other positions as the sentences in (19) indicate:

(19) Carefully, I drank coffee.
I drank the coffee carefully.
I carefully drank the coffee.

We predict that structures as in (17) are likely to fossilize and anecdotally, in that culture they appear to have. Such a consequence, we feel, cannot be attributed to only one factor but is best regarded as an outcome of more than one factor working in tandem.

A major point that we have made in this chapter is that IL forms/structures will tend to fossilize when these are the result of two or more factors working in tandem. In other words, when the MEP is operative, stabilization leading to possible fossilization will take place. A second part of the MEP concerns the role of language transfer. We hypothesized here that language transfer is either a NECESSARY, or at the very least, a PRIVILEGED CO-FACTOR in cases of fossilization. These observations appear to have an interesting implication for the cognitively important learnability problem in

that there is evidence that in cases of fossilization (i.e. where TL structures are unlearnable in some sense), principles peculiar to IL (as opposed to only UG principles) may be operative. In this case, the MEP is one such IL principle.

In conclusion, we should NOT be understood to say that fossilization happens only when language transfer occurs. In fact fossilization without transfer has been found by Gergen in her dissertation data (pc). We hypothesize that there are essentially **four pieces to the fossilization puzzle** and we need to research all four: The first piece of the puzzle relates to the early occurrence of fossilization in cases of severely restricted input. This piece of the puzzle is shown in the Alberto study (Schumann 1978). It is shown again and again in IL created in language for specific purposes contexts (cf. for example, Selinker and Douglas, 1989 and 1991). A second piece of the puzzle relates to backsliding studies which show that it is difficult, **if not impossible**, to eradicate certain IL phenomenon; this was shown to be the case in the mid-1970's in several defossilization experiments (Agnello, 1977 and Bruzzese, 1977; Schumann, 1978), where an attempt was made to explicitly defossilize certain structures in some learners, with backsliding resulting.

Additionally, for us to understand fossilization, a third piece of the puzzle is necessary: carefully designed longitudinal studies on the same individual over several years following IL development (and lack of it). Here, one carefully describes IL phenomena that change and do not change over time. We do not even have a data base here.

A final piece of the puzzle relates to the fact that certain linguistic structures (but not others) tend to fossilize even without severely restricted input. We hypothesized in this paper that this can only occur in a narrow range of structures where language transfer is a co-factor, when the MEP applies. Building on Hale, this is our answer to Orwell's problem in SLA. It is important to note that we get these results especially with fluent IL speakers who can create precise IL texts for specific contexts with other than target-language-like structures. This result once again makes it necessary to separate out precision in an IL from more target-like in that IL and we referred to the studies described in Selinker and Douglas (1989, 1991). We have listed a few candidates for fossilizable structures here, relating them in a serious way to the phenomenon of language transfer and suggesting how the results may be opposite in child L2 acquisition, though, in general, individual differences are as much a mystery as ever.

NOTES

[1]See, for example, the discussion in the *Afterword* to the first edition of this volume. We have been able to achieve whatever clarity has been achieved here only after some long discussions with Jackie Schachter, Connie Gergen and Marta Bean. Earlier versions of this paper were presented by both of us at the February, 1991 Second Language Research Forum and by

Larry at a May, 1991 informal seminar at MIT. We thank Suzanne Flynn and Wayne O'Neil and students in that seminar for a very healthy and useful discussion of the ideas presented here.

[2]We have received this useful distinction from Jackie Schachter (pc) who argues that we should assume the strong form until strong counterevidence has appeared. To date, we have found none.

[3]As a sociolinguistic side issue, we particularly want to put into context how a contextually-oriented SLA person might come to seek general principles within a parameterized UG setting, as well as to show that broadening that perspective to include the variegated data base of contextual SLA, is not a threat to UG principles in SLA, but can only enrich them.

[4]At the conference mentioned in the first footnote, we regularly heard a German colleague produce sentences such as:

We would not predict to find...

A colleague, who is a speaker of Indian English, in a very tense situation, apparently backslid (concerning performance conditions for backsliding, see Selinker, 1972) and said after making a major point:

This is clear to see.

After presenting her paper, at dinner that evening, a Korean graduate student in linguistics, working in the UG mode, produced the following IL nervous statement to one of the authors:

This is the first time to present in a conference.

Though we are most interested here in what persists in IL, we should point out that not only very advanced IL speakers produce tenseless clauses, but lower level learners can as well, e.g. as in the French immersion sentence referred to above and below (Selinker, Swain and Dumas, 1975):

Il veut moi de dire francais a il.

Relevant data are reported in Kishi and Preston (1982) and in Gass and Selinker (1984). These data come from compositions written by Japanese ESL learners, where a relative clause is expected in the TL but an infinitival clause is used, as in for example:

There are some people to get married several times.

There are some differences to represent the national character.

There are many boys to like baseball in Japan.

These data are presented in problem 4.2 in the Selinker and Gass, 1984. What is interesting is that in all of the data given in problem 4.2, we expect to find, in TL-terms, a relative clause embedded inside the VP and as far as we can tell none are expected in the subject position of the matrix clause: That is to say, we do not find IL cases such as:

*The boys to like baseball are fun.

[5]The reader should note that, regarding tenseless clauses, **the default IL structure** in English is infinitive and not gerund. That infinitive is more basic to IL-English than gerund can be seen in the following, also from NPR:

The very real difficulties do not prevent the Soviet Union to play a major role in the Peace Conference (Syrian)

In this case, from a TL-point of view, the infinitive even overrides the expected TL gerund construction. Thus, infinitival clauses appear to the default rather than gerundival clauses. A similar point is made by Mazurkewich (1988). Specifically she states:

> The evidence gathered in this study lends support to the theory of markedness which predicts that the infinitive complement, which is assumed to be unmarked, will be fully acquired before the gerund complement, which is held to be marked. (Mazurkewich 1988, 137)

This study then tends to back up her claim and carries it further by relating what is actually acquired and used to fossilization.

[6]Kellerman (pc) has given us other references to multiple effects, including Sharwood Smith's (1989) detailed use of the notion of conspiracies in IL formation.

[7]This notion of precision in IL may be the same as what has been called explicit. For example, Cushing, Webster, Taylor and Schumann (1988) attribute a large increase in supplying subject pronouns after a stay in the target country, as one possible reason, "an unconscious effort to be explicit, to be sure of being understood..."

[8]It is important to emphasize, that the mastery of the strategy of being able to transfer IL forms from one context to another is essential for SLA to occur. But inappropriate internal-IL transfer does occur, perhaps as a form of negative transfer. This is discussed in further detail in Selinker and Douglas (1990) where empirical studies of the IL outcomes of specialized language courses, and the transfer of these outcomes to other contexts is discussed.

Also, it may be that this pedagogical correlate could be used as a possible **learning strategy** by those language learners who are made aware of how the MEP might work in their developing IL. This sort of knowledge could become an important self-pedagogical tool in people learning, allowing learners to deal better with various types of classroom L2 input.

[9]In this regard, after the SLRF talk mentioned in the first footnote, Odlin pointed out that for English speakers there is morphological transfer to German for precisely the reasons cited here. See Odlin (1988) for more examples of morphological transfer.

[10]It may be noted here that structures such as in (8a) also appear to be produced by Indian speakers of English from other (i.e. non-Hindi) L1 background, though here we restrict ourselves to the Hindi facts, which we feel sure of.

[11]At least these speakers do not act as if they know, although they may know in the sense discussed above concerning Hale's discussion of Orwell's problem. Sorting this out and gaining IL intention and knowledge as to different sorts of competences will prove methodologically difficult, but important to try to work out carefully, nevertheless.

[12]We should note that these data were gathered by Cancino, Rosansky and Schumann (1974) and Gerbault (1978). None of these studies, however, examined the development of ECM verbs nor have they, in fact, reported on these data at all.

[13]Of course, this may not strictly be true, given the junky data theory of Lily Wong Fillmore (pc), i.e. the learners may very well hear deviant sentences in the input from other than non-native speakers in the environment. One must be very careful **not** to say that IL speakers could not have heard a form only because native speakers would not have said it. Also, this is **not** the same problem, as has been claimed, that one must account for the first person in the environment to have produced the deviant form. In our opinion, the latter is an interesting, but different problem.

REFERENCES

Agnello, F. 1977. Exploring the pidginization hypothesis: a study of three fossilized negation systems. *Proceedings of the Los Angeles Second Language Research Forum* ed. by C. Henning. UCLA.

Andersen, R. 1983. Transfer to somewhere. *Language Transfer in Language Learning* ed. by S. Gass and L. Selinker. Rowley, MA: Newbury House.

Andersen, R. 1989. The theoretical status of variation in interlanguage development. *Variation in Second Language Acquisition: Psycholinguistic Issues* ed. by S. Gass,, C. Madden, D. Preston and L. Selinker. Clevedon: Multilingual Matters.

Berwick, R. 1985. *The Acquisition of Syntactic Knowledge.* Cambridge, MA: MIT press.

Bruzzese, G. 1977. English/Italian secondary hybridization: a case study of the pidginization of a second language learner's speech. In *Proceedings of the Los Angeles Second Language Research Forum* ed. by C. Henning. UCLA.

Cancino, H., E. Rosansky, and J. Schumann 1974. Testing hypotheses about second language acquisition: the copula and the negative in three subjects. *Working Papers in Bilingualism*, 6. 80-96.

Chomsky, N. 1986. *Knowledge of Language: Its Nature, Origin and Use.* New York: Praeger.

Cushing, S., C. Webster, H. Taylor and J. Schumann. 1988. Further research on a lexical method for language learning. Paper presented at TESOL, Chicago.

Duškova, L. 1984. Similarity--and aid or hindrance in Foreign Language Learning? *Folia Linguistica*, 18. 103-15.

Felix, S. and W. Weigl 1991. Universal Grammar in the classroom: the effects of formal instruction on second language acquisition. *Second Language Research*, 7. 2: 162-180.

Flynn, S. and W. O'Neil 1988. Introduction. *Linguistic Theory in Second Language Acquisition* ed by S. Flynn and W. O'Neil. Dordrecht: Kluwer Academic Publishers.

Gass, S. 1984. A review of interlanguage syntax: language transfer and language universals. *Language Learning.* 34.2. 115-132.

Gass, S. 1988. The role of transfer. *Linguistic Theory in Second Language Acquisition* ed. by S. Flynn and W. O'Neil . Dordrecht: Kluwer Academic Publishers.

Gerbault, J. 1978. The Acquisition of English by a Five-year-Old French Speaker. MA thesis. UCLA.

Hale, K. 1988. Linguistic Theory. *Linguistic Theory in Second Language Acquisition* ed. by S. Flynn and W. O'Neil. Dordrecht: Kluwer Academic Publishers.

Harley, B. and M. Swain 1984. The interlanguage of immersion students and its implications for second language teaching. *Interlanguage* ed. by A. Davies, C. Criper and A. Howatt. Edinburgh University Press.

Kishi, M. and D. Preston. 1982. A good sentence to say: infinitive modifiers in English. *New Organon.*

Jain, M. 1969. Error analysis of an Indian English corpus. Unpublished paper. University of Edinburgh.

Jain, M. 1974. Error analysis: source, cause and significance. In J. C. Richards 1974

Kellerman, E. 1983. Now you see it, now you don't. *Language Transfer in Language Learning* ed. by S. Gass and L. Selinker . Rowley, MA: Newbury House.

Lakshmanan, U. 1989. Accessibility to Universal Grammar in Child Second Language Acquisition. Ph.D. Dissertation, University of Michigan.

Lakshmanan, U. 1991a. Infinitival complements of *want* in child SLA. mss., Southern Illinois University.

Lakshmanan, U. 1991b. The boy for the cookie-- Some evidence for the non-violation of the Case-Filter in child second language acquisition. mss., Southern Illinois University.

Larsen-Freeman, D., and M. Long 1991. *An Introduction to Second Language Research.* London: Longman.

Mazurkewich, I. 1988. The Acquisition of Infinitive and Gerund Complements by Second Language Learners. *Linguistic Theory in Second Language Acquisition* ed. by S. Flynn and W. O'Neil . Dordrecht: Kluwer Academic Publishers.

Odlin, T. (1988). *Language Transfer.* Cambridge: Cambridge University Press.

Richards, J. C.. (ed.) 1974. *Error Analysis: Perspectives on second language acquisition.* London: Longman.

Rizzi, L. 1987. Null object in Italian and the Theory of pro. *Linguistic Inquiry* 17. 501-57.

Schumann, J. 1978. *The Pidginization Process: A Model for Second Language Acquisition.* Rowley, MA: Newbury House.

Selinker, L. 1966. A psycholinguistic study of language transfer. Ph.D Dissertation. Georgetown University.

Selinker, L. 1969. Language Transfer. *General Linguistics.* 9. 67-92.

Selinker, L. 1972. Interlanguage. *International Review of Applied Linguistics.* 10. 209-231.

Selinker, L. 1991. *Rediscovering Interlanguage.* London: Longman.

Selinker, L. and D. Douglas. 1989. Research methodology in contextually-based second language research. *Second Language Research.* 5.1: 1-34.

Selinker, L. and D. Douglas. 1991. Research methodology in contextually second language research II. Paper presented to the conference on *Theory and Method in Second Language Acquisition.* Michigan State

Selinker, L. and S. Gass. 1984. *Workbook in Second Language Acquisition.* Rowley, MA: Newbury House.

Selinker, L. and U. Lakshmanan. 1990. Consciousness raising strategies in the rhetoric of L2 writing development. Paper presented at the annual TESOL conference, San Francisco, March 1990.

Selinker, L. and J. Lamendella. 1978. Two perspectives on fossilization in interlanguage learning. *Interlanguage Studies Bulletin.* 3. 143-191.

Selinker, L., M. Swain, and G. Dumas. 1975. The interlanguage hypothesis extended to children. *Language Learning.* 25. 139-152.

Sharwood Smith, M. 1989. Crosslinguistic influence in language loss. *Bilingualism Across the Lifespan: Aspects of Acquisition, Maturity and Loss* ed. by K. Hyltenstam and L. Obler. Cambridge: Cambridge University Press.

Stowell, T. 1981. The origins of phrase structure. Ph.D. dissertation, MIT.

Tiphine, U. 1983. The Acquisition of English Statements and Interrogatives by French-Speaking Children. Doctoral Dissertation, University of Kiel.

Weinreich, U. 1953. *Languages in Contact.* The Hague: Mouton Publishers.

White, L. 1989. The adjacency condition on case assignment. *Linguistic Perspectives on Second Language Acquisition* ed. by S. Gass and J. Schachter. Cambridge: Cambridge University Press.

Whitney, W. D. 1881. On Mixture in Language. *Transactions of the American Philological Association* 12. 1-26.

Wode, H. 1978. The L1 vs. L2 acquisition of English negation. *Working Papers on Bilingualism.* 15. 37-57.

Zobl, H. 1980. The formal and developmental selectivity of L1 influences on L2 acquisition. *Language Learning* 30. 43-57.

Zobl, H. 1982. A direction for contrastive analysis: the comparative study of developmental sequences. *TESOL Quarterly.* 16. 169-83.

Zobl, H. 1983. Markedness and the projection problem. *Language Learning* 33. 293-313.

Zobl, H. 1984. Uniformity and Source-language Variation across Developmental Continua. *Language Universals and Second Language Acquisition* ed. by W. Rutherford . Amsterdam: John Benjamins.

Universal Grammar: Is It Just a New Name for Old Problems? *

Lydia White

Introduction

Within generative grammar, certain aspects of language structure are assumed to be innately present in the first language (L1) learner, helping to account for the fact that the child acquires all the complexities and subtleties of language although these are underdetermined by the input data. This innate structure is referred to as 'Universal Grammar' (UG); it consists of principles which underlie native speaker knowledge of language. Current Government and Binding (GB) Theory (Chomsky 1981, 1986) constitutes one attempt to characterize the principles of UG. In addition to fixed principles, UG is assumed to contain parameters, with a limited number of values, known as parameter settings. Input data from the L1 "trigger" the appropriate setting for the language being learned (see Lightfoot 1989 for discussion). In other words, the input determines the choice between the built-in settings.

GB theory has attracted considerable attention as a potential theory of second language (L2) learner competence, with the focus of much recent GB-based L2 research being on whether or not UG is still available to L2 learners. Arguments in favor of a role for UG in L2 acquisition center on the "projection problem"; native speakers end up with a highly complex unconscious mental representation of their language, even though many properties of language are not explicit in the input, suggesting that universal principles must mediate L1 acquisition and shape knowledge of language. It seems most unlikely that L2 input will contain explicit information about these kinds of properties in the L2; thus, if L2 learners attain unconscious knowledge of the L2 which goes beyond the input in similar ways, it suggests that UG must still be involved (see White 1989a for more detailed discussion). Arguments against UG in L2 acquisition emphasize difficulties faced by L2 learners, and differences between L1 and L2 acquisition; it is claimed that these can best be explained on the assumption that UG is no longer available to adult L2 learners, that there is a "fundamental difference" between L1 and L2 acquisition (Bley-Vroman 1989, 1990; Clahsen 1988a, b; Clahsen and Muysken 1986, 1989; Schachter 1988).

In this chapter, I will concentrate on research which has pursued the

implications of parameter theory for L2 acquisition. Two opposing trends are apparent in this research: on the one hand, researchers use parameters of UG to offer an explanation of language transfer: if UG is available to L2 learners, parameters can explain and predict cases of language transfer, on the assumption that learners apply their L1 parameter settings to the L2 (e.g. White 1985, 1988) or are otherwise affected by L1 settings (Flynn 1987). Conversely, some researchers use transfer to question the full operation of UG in L2 acquisition: if L2 learners can only adopt principles or parameter values found in the L1, this indicates that access to UG is essentially "incomplete", and helps to account for differences between L1 and L2 acquisition (e.g Schachter 1991).

The theory of UG is currently being applied to two areas which have long been of concern in L2 acquisition research, namely the role of transfer and the question of L1/L2 acquisition differences. These two areas are interconnected. I will suggest in this chapter that UG provides new insights in these domains, and a different perspective on old problems.

Parameters and Transfer

When considering the potential operation of UG in L2 acquisition, the fact that L2 learners already know a language raises the issue of language transfer. It might seem that universal principles should be unaffected by transfer. However, parameterized principles are of obvious potential relevance whenever the L1 and L2 differ as to the value they adopt for some parameter.[1]

An example is the parameter of head-position, which determines the ordering of heads (nouns, verbs, prepositions, etc.) and their complements (e.g. relative or appositive clauses, and the objects of verbs and prepositions) (Chomsky 1986; Travis 1984). Head-initial languages have heads before complements; head-final languages have complements before heads. The Head-position Parameter applies across categories within a language.[2] In a head-initial language, the complements of the verb will occur after the verb, the complements of the noun after the noun, the complements of prepositions and adjectives after the preposition or adjective; in head final languages, complements will all precede their heads. English, for example is a head-initial language, where direct objects follow verbs and relative clauses follow their head nouns, whereas Japanese is head-final, with direct objects preceding verbs, and relative clauses preceding nouns. In L2 acquisition, Japanese learners of English or English learners of Japanese will have to acquire a different setting for the Head-position Parameter if their L2 acquisition is to be successful.

A considerable amount of recent research has addressed itself to the influence of the L1 parameter setting on the L2 learner's hypotheses about the L2. Before looking in more detail at UG-based transfer research, let us consider some

general possibilities as far as parameters are concerned. If the L1 and the L2 share a parameter setting, this might be expected to offer an advantage to the language learner, and lead to some kind of "positive transfer". For instance, if the L1 and L2 share the same value of the Head-position Parameter, the L2 learner might be at an advantage in learning L2 word order. On the other hand, if the L1 and L2 settings differ, some form of "negative transfer" might be expected; an L2 learner whose L1 had a different value for head-position would be expected to have problems resetting the parameter and might produce word order errors reflecting the L1 order. (However, when combined with certain learnability considerations, the GB perspective does not necessarily predict difficulties for all cases of parametric differences between the L1 and the L2. See *Learnability* section for further discussion.)

Most researchers who argue for a UG perspective on transfer make some such general assumption but they differ as to the precise form of influence that is attributed to the L1. One possibility is that the L1 parameter setting actually constitutes the learner's interim theory about the L2 data, until subsequent resetting to the L2 value (or some other value) takes place. In other words, L1 parameter settings are part of the interlanguage grammar, either briefly or for a longer period of time, and as such they influence the way the L2 learner attempts to comprehend and produce the L2 (e.g. Phinney 1987; Schwartz 1987; White 1985, 1986, 1988).

In contrast, Flynn (e.g. 1987), looking specifically at the Head-position parameter and its effects on pronominal anaphora interpretation, argues that while the L1 setting has an effect, it is never actually adopted in the interlanguage grammar. Where the L1 and L2 differ as to the settings they require, the L1 setting causes difficulty and delay in acquiring the L2 setting but the difficulty does not manifest itself in the form of an inappropriate parameter setting. It is not clear on this account what the nature of the interlanguage grammar is before the learner acquires the appropriate L2 setting, i.e. what guides the hypotheses if the L2 setting has not been acquired but the L1 setting is not being used either.

UG and Transfer: A New Name for Old Problems?

It might be objected that all that is achieved by claiming that transfer reflects the influence of the L1 parameter setting is to give a more fancy name to a well-known phenomenon, leaving us with nothing more than an updated version of the Contrastive Analysis Hypothesis (CAH) in the guise of parameters of UG. If approaching L2 acquisition from the perspective of GB theory yields nothing more than a redescription of existing phenomena, this is not, of course, particularly interesting. Furthermore, one of the reasons why the CAH failed was that it predicted transfer where none was in fact found; GB theory might fall into the same trap. If learners adopt L1 parameter settings, why doesn't the interlanguage

grammar just resemble the L1 using L2 vocabulary?

In fact, there are certain insights that GB theory offers, which were not available under the CAH, and which offer a genuinely different perspective on transfer, and a different range of predictions. Some of the differences between UG-based theories of transfer and earlier theories are general, others are quite specific.

The general ones stem from the underlying motivation of generative grammar, the assumption that linguistic theory is a theory of the mental representation of the native speaker's unconscious knowledge of language. This means that claims that L1 parameter settings affect L2 acquisition are not claims about strategies used by L2 learners, or conscious comparisons between the L1 and the L2, or falling back on the L1 only due to temporary lack of knowledge of the L2, or the dominance of L1 habits, or whatever. Rather the claim is that certain parameter settings may be represented in the interlanguage grammar of the L2 learner, just as they are part of the internalized grammar of a native speaker. In some cases, then, the interlanguage grammar will instantiate an L1 parameter setting, rather than that appropriate for the L2.

In addition, as a theory of the principles and parameters which account for the L1 learner's ultimate attainment, and possibly for the course of language development (Hyams 1986), UG helps to account for those aspects of L1 acquisition that have been referred to as "creative" or "developmental" in the L2 literature (Dulay and Burt 1974). In applying parameter theory to the L2 acquisition domain, one is not claiming that this side of UG is lost. Parameters crucially interact with L2 input, so that appropriate L2 parameter settings can be attained. As frequently pointed out by Flynn (e.g. 1988) and by White (e.g. 1988), the UG perspective has the potential to bring together transfer and non-transfer aspects of L2 acquisition within one theoretical framework.

More specific ways in which the UG approach to transfer differs from earlier approaches are as follows:

> (i) levels - generative grammar crucially assumes that representations involve a number of different syntactic levels; transfer may affect some or all of these, with direct or indirect consequences. The CAH, in contrast, concentrated on "visible" surface similarities and differences between languages.
> (ii) clustering - parameters link clusters of properties, which superficially might seem to be unconnected. Thus the claim that the L1 value of a parameter will be adopted, or will color the L2 learner's perception of the L2 input, is a claim about a whole range of structures in the interlanguage.

(iii) interacting parameters - since UG contains many parameters, it is likely that a number of these will have to be reset in L2 acquisition. This leads to the possibility that they will not all be reset at the same time. In that case, interlanguages will result that are neither exactly like the L1 nor the L2. Similar effects will be achieved if learners adopt parameter settings which are present in neither the L1 nor the L2.
(iv) learnability - certain parameter settings may be unmarked or marked, their status determined by learnability considerations, in particular by the assumption that L1 acquisition proceeds largely on the basis of positive evidence. When applied to L2 acquisition, this perspective gives a different twist to transfer issues from traditional claims about markedness and transfer.

In the following sections, these four issues are examined in turn, using examples from the literature to show how work on parameters in L2 acquisition has been able to offer a different perspective on transfer.

Levels of Representation

One difference between traditional accounts of transfer and those inspired by generative grammar concerns the levels at which the L1 might have effects. The CAH, for example, made claims about surface differences between languages, differences that would be "obvious" to a researcher or teacher. However, this is by no means the only level at which parametric differences are to be expected. In GB theory (and earlier versions of generative grammar) there are various levels of structure. Grammatical and thematic relationships are represented at D-structure. The rule move α moves syntactic categories out of their D-structure positions; S-structure is the level that represents the effects of move α. PF (phonetic form) is the level closest to the actual form of a sentence as uttered. LF (logical form) is a level of representation for those aspects of meaning that relate to sentence structure.

It is quite possible for languages to have superficially similar sentence types, which in fact stem from very different D- or S-structures. According to the traditional CAH, these superficial similarities would be predicted not to cause problems, whereas on a GB account which proposes structural differences in their analysis, transfer effects might be expected. Haegeman (1985, 1988) offers an illustration of such a case. The following sentences in Dutch and English appear to be identical in form:

(1) a. Jan kocht een boek voor zijn moeder
b. John bought a book for his mother

However, (1a) and (1b) have very different D-structures and S-structures. The Dutch sentence is derived from a D-structure with the verb in final position, since Dutch is a head-final language (at least with respect to VP), with SOV word order. The Germanic "verb-second" rule moves the verb into second position and the subject is preposed into a topic position (technical details omitted). The English sentence, on the other hand, reflects the underlying SVO order of English. The two languages differ as to their settings for the Head-position Parameter, and with respect to the position of INFL, and also as to the possibility of verb-movement, and yet they have a range of sentences with a common word order. This means that one cannot simply look for surface similarities or differences between languages to determine the potential influence of the L1. (See Haegeman (1985, 1988) for discussion of a range of subtle effects on the interlanguage which stem from these parametric differences between Dutch and English.)

Conversely, different surface forms can result from the same D-structure. For example, in languages like Italian, two surface orders are found with unaccusatives verbs like arrive. (Unaccusatives, also called ergatives, are verbs whose sole argument is a theme.) The order can be subject verb, as in (2a) or verb subject, as in (2b). Burzio (1986) argues that unaccusative verbs should be represented at D-structure with an empty subject position and the theme in object position, as in (2c). In the case of sentences like (2a), the theme moves into subject position at S-structure, leaving a coindexed trace, as in (2d). This analysis accounts for a range of interesting properties exhibited by such verbs.

(2) a. *Giovanni arriva*
John arrived

b. *Arriva Giovanni*
arrived John
"John arrived"

c. [e [VP V NP]]

d. [NP_i [VP V t_i]]

Although all languages have unaccusative verbs, they do not necessarily allow the same surface orders. In English, for example, unaccusatives are found in sentences of the form of (2a) but not (2b). Nevertheless, it is assumed that they too have a D-structure like (2c).

Zobl (1989) explores the implications of the claim that unaccusatives arise from common D-structures which are realized differently in different languages. He suggests that certain errors found in the speech of L2 learners can be directly attributed to difficulties in working out how unaccusatives are realized in English. Zobl is not in fact arguing for transfer; he points out that transfer of surface patterns allowed with unaccusatives in the L1 cannot account for the L2 learner data, but nor does their language necessarily exhibit a direct reflection of

D-structure. Here we have an interesting example where surface differences between languages do not lead to transfer errors (as the CAH would have predicted), although they do lead to errors.

By making predictions based on a theory which assumes the importance of a number of levels of representation, researchers have been able to look beyond surface similarities and differences, to try and establish more precisely where and when the L1 will have an influence, and what that influence will be.

Clustering

Parameter settings usually account for clusters of properties, which superficially might seem to be unrelated. One of the first parameters to be proposed in linguistic theory was the Prodrop or Null Subject Parameter (Chomsky 1981); this parameter was also one of the first to be investigated in the L2 acquisition context, particularly from the point of view of the claim that UG can account for language transfer (e.g. Hilles 1986; Liceras 1988, 1989; Phinney 1987; White 1985, 1986). The Null Subject Parameter has a cluster of properties associated with each of its values, and all the L2 research on this parameter has looked at the clustering issue.

There are certain languages, such as Italian and Spanish, which allow the omission of subject pronouns. These languages exhibit the [+ null subject] value of the parameter. Other languages, such as English, require lexical subjects, in accordance with the [- null subject] value. In other words, the subject position in an English sentence cannot be empty, whereas it may in Spanish, as shown in (3):

(3) *Leemos muchos libros*
Read many books
"We read many books"

In addition, other properties cluster with the presence or absence of null subjects. The following have been proposed as clustering with the [+ null subject] value: rich agreement systems, the possibility of postposing the subject, the possibility of extracting the subject of an embedded clause over a complementizer (the so-called that-trace effect), the absence of a distinct category of modal auxiliaries.

There have been a number of studies on the acquisition of English, a [- null subject] language, by native speakers of Spanish, a [+ null subject] language (e.g. Hilles 1986; Phinney 1987; White 1985, 1986) and of the acquisition of Spanish by native speakers of English or French (also a [- null subject] language) (Liceras 1988, 1989; Phinney 1987). The detailed results of these studies will not be discussed here. However, there are trends common to all of them. With the exception of the study by Hilles, which looks at longitudinal production data from only one native speaker of Spanish learning English, all the experimental studies have found that the associated properties do not in fact consistently cluster together

in the interlanguage. That is, while Spanish-speaking learners of English show evidence of transferring the possibility of null subjects from Spanish to English (as all of the studies have found), they do not transfer other aspects of the parameter, such as subject postposing. When English or French-speaking learners of Spanish make correct use of null subjects in the L2, they do not necessarily show evidence of having acquired other aspects of the [+ null subject] value of the parameter, such as the possibility of that-trace sequences.

In other words, studies so far conducted on the Null Subject Parameter suggest that L2 learners fail to show the full cluster of properties associated with that parameter, either in terms of what they transfer from the L1, or in terms of what properties of the L2 they successfully acquire. There are a number of possible explanations for this failure. These range from the possibility that parameters of UG no longer operate in L2 acquisition, hence the breakup of the cluster of properties, to methodological problems with the ways in which the cluster was tested. In addition, there is considerable disagreement among linguists as to precisely what the cluster consists of. The important point is not which of these explanations ultimately proves to be correct, but rather that research conducted within this perspective has led people to look for potential relationships between different structures in the interlanguage, and has led to the assumption that transfer might have quite a different range of effects from what has traditionally been assumed. Even where the full cluster does not seem to have been operative in the interlanguage grammar, nevertheless some properties of the parameter (i.e. a subset of the full cluster) do appear to be linked, suggesting that exploring connections between structures linked by parameters is a fruitful way of gaining insight into the effects of the L1 on the interlanguage grammar.

Multi-valued and interacting parameters

Many parameters of UG are assumed to be binary, having only two values. If L2 learners are guided by UG, there would seem to be only two possibilities for such parameters in the interlanguage grammar, namely that learners adopt either the L1 value or the L2.[3] However, there are proposals for multi-valued parameters as well as binary ones. In such cases, L2 learners might adopt a parameter setting which is found neither in the L1 nor in the L2. Finer and Broselow (1986), Finer (1991) look at a parameter which has five values rather than two, namely the Governing Category Parameter (Wexler and Manzini 1987), taking L1 Japanese or Korean and English as the L2. They argue that L2 learners adopt a value for this parameter which is that of neither the L1 nor the L2, but is found in other languages.

Furthermore, since parameters do not operate in isolation, some parameters may be set by the learner at the L1 value and others at the L2, leading to an

interlanguage which does not look like the L1 grammar, even though some L1 parameter settings are involved. UG is an intricate system of principles and parameters. In the studies discussed above, researchers have isolated one parameter and then looked for evidence of its effects on the interlanguage grammar. Many properties of the L2 will in fact derive from the interactions of a number of parameters. L2 researchers have just begun to look at this issue, particularly in the context of Germanic word order. Clahsen and Muysken (1986), Clahsen (1988b) have argued that adult L2 learners do not have access to UG (not even L1 parameter settings), and that adult stages of acquisition of German word order are best explained on the assumption that they are driven by more general learning and processing strategies. They back up their claim with comparative data from child L1 and adult L2 learners of German, pointing out that there are systematic differences in the way these groups acquire German word order, and in their error patterns.

Responding to these claims, du Plessis et al. (1987), Schwartz and Tomaselli (1990) have argued that German word order is explained by a number of different parameters, including the Head-position Parameter. They propose that adult learners of German initially adopt the L1 values of the parameters in question, and that they do not set all these parameters to their appropriate L2 value at the same time, the Head-position Parameter being reset before the others. The gradual resetting of the various parameters in fact can account for the stages of development that Clahsen and Muysken describe. Where multiple parameters are concerned, the interlanguage grammar does not necessarily conform to either the mother tongue or the L2 settings, but may show a combination of values characteristic of some other language. (See also Hulk (1991) for work assuming similar patterns of parameter resetting in the acquisition of French by native speakers of Dutch.) L1 parameter settings, then, are not adopted exclusively.

The above authors do not, on the whole, discuss why some parameters should retain their L1 setting longer than others in the interlanguage grammar, but this may well relate to the issue to be discussed in the next section, namely the nature of the evidence available to motivate a resetting.

Learnability

Another way in which the UG perspective on transfer differs from more traditional perspectives is in the attention it pays to arguments from language learnability, and particularly the role played by positive evidence in the acquisition of language. It is standardly assumed that L1 acquisition proceeds on the basis of positive evidence, since children do not get relevant and consistent negative evidence (for a recent statement of this position, see Pinker 1989). In addition, it is assumed that children are somehow constrained to start with the most

conservative hypothesis compatible with the input. This has recently been formulated in terms of the Subset Principle, whose purpose is to ensure that children do not pick a parameter setting which is incorrect for the language being acquired and which would require negative evidence for disconfirmation (Berwick 1985; Wexler and Manzini 1987).

For example, Wexler and Manzini (1987) propose a Proper Antecedent Parameter , a modified version of which is given in (4):

(4) A proper antecedent for a reflexive is
  a. a subject
  or
  b. any NP

This parameter determines what kind of NP can serve as the antecedent for a reflexive. Languages like Korean or Japanese only allow subjects as the antecedents of reflexives, whereas languages like English allow subjects and non-subjects. Sentences like (5) are ambiguous in English, but the equivalent sentences are not ambiguous in Korean or Japanese. In English, Susan or Nancy can serve as the antecedent of the reflexive; in the Korean equivalent, only the subject, i.e. Susan, can:

(5) Susan showed Nancy a picture of herself

Korean, then, allows a subset of the sentences allowed by English with respect to this property. In other words, English allows the sentence types allowed by Korean, and additional ones as well.

The learnability problem is as follows. Suppose that the Korean or Japanese L1 acquirer, on hearing any sentence involving a reflexive, makes the incorrect generalization that reflexives can be bound to any NP. It is not clear what positive input will indicate that the interpretation of (5) is excluded, where Nancy is the antecedent of herself.

The Subset Principle solves this problem by stipulating that where an L1 learner is faced with input which could be accommodated by either of two parameter settings, the parameter setting which generates the subset language (the unmarked value) should be adopted, unless there is positive evidence to the contrary, in which case the value generating the superset language will be adopted (the marked value). In other words, Korean children, on being exposed to Korean sentences containing reflexives, will adopt value (a) of the Proper Antecedent Parameter, and will never encounter evidence causes them to change this analysis. The English child, on the other hand, will at some point hear sentences like (6), where the antecedent of the reflexive is clearly not the subject, and will set the parameter to value (b).

(6) Bill showed Nancy a picture of herself

How do these claims about the Subset Principle and L1 acquisition relate

to transfer in the L2 acquisition context? There will be differences depending on whether the L1 or the L2 has the subset (unmarked) value of a parameter. Consider an English learner of Korean or Japanese. If the learner adopts the marked English value of the Proper Antecedent Parameter, it is not clear what positive L2 input will motivate a retreat to the unmarked setting actually required by these languages. What input will indicate to the learner that Nancy is excluded as the antecedent of herself in the Japanese equivalent of (5)? Presumably context will indicate on particular occasions that Susan is the antecedent, but finding out that the object happens not to be the antecedent on a particular occasion is not the same thing as finding out that it may never be the antecedent. In such cases, then, the effects of transfer are expected to be serious, because there is no positive L2 evidence to lead to parameter resetting, and fossilization of the L1 setting is more likely to occur. (Such situations also motivate the possibility that negative evidence might play a role in L2 acquisition (cf. White 1990a, 1991)). Thomas (1990, 1991) found that English learners of Japanese do indeed incorrectly assume that non-subjects can be antecedents of the Japanese reflexive zibun. A number of recent papers have looked at other situations where the L1 has a parameter value which generates a superset of the sentences allowed by the L2. In these cases, transfer of the L1 setting has been reported (Hirakawa 1990; White 1989b; Zobl 1988).

In contrast, the Korean learner of English has the unmarked value of the parameter instantiated in the L1, and is learning an L2 which requires the marked value. There will be positive evidence in the L2, in the form of sentences like (6) or sentences like (5) with a disambiguating context, which indicate that the antecedents of reflexives are not restricted to subjects, and which motivate the marked value of the parameter. Here, then, L2 acquisition can proceed on the basis of positive evidence, and transfer of the L1 setting, even if it occurs, is not expected to be permanent. Several recent studies are relevant for this issue (Finer 1991; Hirakawa 1990; Thomas 1991). In these studies, Korean and Japanese learners of English were found to behave very similarly to native speakers of English with respect to choice of antecedents for reflexives. That is, they showed a preference for subjects as antecedents, but objects were also permitted, suggesting that the L2 value for the Proper Antecedent Parameter had been successfully acquired.

In principle, in cases where the positive L2 evidence motivates a different setting from that instantiated in the L1, resetting could be (almost) immediate, predicting little or no transfer, especially if the relevant positive evidence is readily available in the input. This is true both for cases similar to the one just described, where the L2 parameter setting generates a wider language than the L1, and also where the L1 and L2 differ without markedness being at issue, as is the case for

head-position, where the head-initial and head-final values of the parameter do not yield languages in a subset/superset relationship but nevertheless there is ample positive evidence (from various aspects of word order) as to the difference in the settings. The Japanese learner of English or the English learner of Japanese should early on encounter evidence that indicates the word order differences between the two languages. In these cases, then, the Head-position Parameter should be reset without difficulty, predicting little transfer.[4]

Using markedness predictions to make claims about transfer is, of course, not new in L2 acquisition research (e.g. Eckman 1977; Hyltenstam 1984; Kellerman 1978). These researchers have argued, from a variety of perspectives, that unmarked properties of language are in some sense privileged and will be more likely to transfer, whereas marked properties will not be liable to transfer, and will be harder to acquire in the L2. The studies that take learnability into consideration differ from these approaches in focusing on the nature of the evidence required to arrive at correct properties of the L2. Learnability theory claims that acquisition can proceed when positive evidence is available but that it is problematic where the learner makes certain kinds of overgeneralizations requiring negative evidence. Applying L1 parameter settings to the L2 in certain cases lead to such overgeneralizations. Markedness claims deriving from learnability theory, then, are (a) that marked parameter settings may be transferred from the L1, and (b) that marked L2 settings can be acquired, given appropriate positive L2 input. Thus, unmarked properties of language are not particularly privileged in the L2 acquisition context. (I should point out that the above claim is not accepted by all researchers working on markedness and transfer within a GB perspective; Liceras (1989), and Phinney (1987) adopt an approach which is closer to the more traditional one, namely the assumption that unmarked properties of the L2 will be readily accessible even when the L1 instantiates the marked value of a parameter.)

Transfer and Access to UG in Adult L2 Acquisition

Implicit or explicit in most studies so far mentioned is the assumption that UG plays an active role in adult L2 acquisition, even though L1 parameter settings are adopted, or exert other forms of influence. Thus, properties of UG, in particular parameters, contribute to an explanation of language transfer. The considerations discussed above suggest that working on language transfer within the framework of generative grammar offers rather more than new names for old problems. Different predictions are made about L2 acquisition and explanations are proposed which are different from those found under previous views of transfer.

In contrast, there are researchers who draw a very different conclusion from data which suggest the adoption of the L1 parameter setting. These researchers

argue that UG is essentially inactive in adult L2 acquisition and that adults' only access to UG is via whatever is instantiated in the L1 (Bley-Vroman 1989, 1990; Clahsen and Muysken 1989; Schachter 1988). On this view, then, UG does not offer an explanation of transfer, since UG is no longer available. Instead, data that reflect transfer suggest that UG is inactive.

Both the view that UG is available and the view that it is not assume that L1 parameter settings will be applied to the L2; however, there is a crucial difference between them, concerning the question of resetting a parameter to the appropriate L2 value. If UG is still available, the learner is not assumed to be 'stuck' with L1 parameter settings; parameter resetting to the L2 value is possible, on the basis of input from the L2 interacting with a still active UG (White 1989a, 1990b). On the second view, on the other hand, only L1 parameter settings (as well as fixed principles exemplified in the L1) will be accessible to the L2 learner (Clahsen and Muysken 1989). Parameters cannot be reset; if the L1 and the L2 differ as to the values they have for some parameter, the L1 value will be adopted, and the L2 value will not be attainable, nor should there be "mixed" settings like those described above where some parameters are set at their L1 value, others at their L2, others at values found in different natural languages. Thus, transfer data are compatible with two radically different theories about the mechanisms involved in L2 acquisition; any data that demonstrate only the operation of the L1 value of a parameter in L2 acquisition cannot be used to determine whether UG is active or inactive, but research which demonstrates evidence of the attainment of any non-L1 value, or any combination of L1 and L2 values, favors the hypothesis that UG is still active in L2 acquisition.

Conclusion

An advantage of conducting research on language transfer from within the framework of GB theory is that this theory offers very specific and testable claims about the nature of native speaker linguistic competence. UG is a theory of knowledge in a particular domain, a theory of abstract principles and parameters, which both constrain child language acquisition and form part of adult native speaker knowledge of language. By looking at the operation of parameters in L2 acquisition, a greater understanding of the precise influence of the mother tongue can be achieved, as well as insight into the overall accessibility of UG in non-primary acquisition.

I should, however, like to emphasize that since second language acquisition is not a unitary phenomenon, it is unrealistic to expect there to be one paradigm that will be able to embrace the whole field. Generative grammar certainly cannot provide an explanation of everything that L2 learners do or fail to do. Its relevance is strictly limited to providing a potential explanation of the acquisition

of rather formal aspects of language structure. It is highly likely that language transfer will also be involved in domains that fall outside the scope of UG. But, sticking within these circumscribed limits, it appears that generative grammar provides a suitable paradigm from which to address issues of importance within second language acquisition, including the issue of transfer, and that adopting this framework is not simply a matter of renaming old problems; instead, it offers new insights and suggests new lines of research.

NOTES

* This research was conducted with the assistance of the following research grants: Social Sciences and Humanities Research Council Canada Research Fellowship #455-87-0201, Social Sciences and Humanities Research Council of Canada research grant #410-87-1071 (to Lisa Travis and Lydia White), Government of Québec FCAR research grant #88 EQ 3630 (to Lisa Travis and Lydia White).

1. In addition, languages can differ as to the fixed principles that they instantiate, in that certain properties of a language may render a principle inoperative. Situations where the L1 and L2 differ with respect to the operation of a principle can lead to L1 influence. See, for example, Johnson (1988), Schachter (1989, 1991) for relevant work on the Subjacency Principle.
2. There are languages (e.g. Chinese) which, on the surface at least, do not show consistent head-complement orders. The Head-position Parameter is a claim about D-structure orders; certain derived orders show up at S-structure which are not the same as the underlying order.
3. In some cases, however, parameters might be left unset. For example, if a learner is learning a language without wh-movement, the question of parameterized bounding nodes for Subjacency will not arise, because Subjacency will not operate, since it is a constraint on movement.
4. This contrasts with the acquisition of German word order, where internal inconsistencies in surface word orders allowed by German make it hard for the L2 learner to establish immediately that German is SOV, as discussed in the section *Multi-valued and interacting parameters.*

REFERENCES

Berwick, R. 1985. *The acquisition of syntactic knowledge.* Cambridge, MA; MIT Press.

Bley-Vroman, R. 1989. What is the logical problem of foreign language learning? *Linguistic perspectives on second language acquisition* ed. by S. Gass and J. Schachter. Cambridge; Cambridge University Press.

Bley-Vroman, R. 1990. The logical problem of foreign language learning. *Linguistic Analysis* 20. 3-49.

Burzio, L. 1986. *Italian syntax: a government-binding approach.* Dordrecht; Reidel.

Chomsky, N. 1981. *Lectures on government and binding.* Dordrecht; Foris.

Chomsky, N. 1986. *Knowledge of language: its nature, origin, and use.* New York; Praeger.

Clahsen, H. 1988a. Critical phases of grammar development: a study of the acquisition of negation in children and adults. *Language development* ed. by P. Jordens and J. Lalleman. Dordrecht; Foris.

Clahsen, H. 1988b. Parameterized grammatical theory and language acquisition: a study of the acquisition of verb placement and inflection by children and adults. *Linguistic theory in second language acquisition* ed. by S. Flynn and W. O'Neil. Dordrecht; Kluwer Academic Publishers.

Clahsen, H. and P. Muysken. 1986. The availability of universal grammar to adult and child learners: a study of the acquisition of German word order. *Second Language Research* 2. 93-119.

Clahsen, H. and Muysken, P. 1989. The UG paradox in L2 acquisition. *Second Language Research* 5.1-29.

Dulay, H. and Burt, M. 1974. A new perspective on the creative construction processes in child second language acquisition. *Language Learning* 24.253-258 .

du Plessis, J., Solin, D., Travis, L. and White, L. 1987. UG or not UG, that is the question: a reply to Clahsen and Muysken. *Second Language Research* 3.56-75.

Eckman, F. 1977. Markedness and the contrastive analysis hypothesis. *Language Learning* 27. 315-330.

Finer, D. 1991. Binding parameters in second language acquisition. *Point counterpoint: Universal Grammar in the second language* ed. by L. Eubank. Amsterdam: John Benjamins.

Finer, D. and Broselow, E. 1986. Second language acquisition of reflexive-binding. *Proceedings of NELS 16*. University of Massachusetts at Amherst; Graduate Linguistics Students Association.

Flynn, S. 1987. *A parameter setting model of L2 acquisition*. Dordrecht; Reidel.

Flynn, S. 1988. Second language acquisition and grammatical theory. *Linguistics: the Cambridge survey, Vol II* ed. by F. Newmeyer. Cambridge: Cambridge University Press.

Haegeman, L. 1985. Scope phenomena in English and Dutch and L2 acquisition: a case study. *Second Language Research* 1.118-150.

Haegeman, L. 1988. The categorial status of modals and L2 acquisition. *Linguistic theory in second language acquisition* ed. by S. Flynn and W. O'Neil. Cambridge, MA: MIT Press.

Hilles, S. 1986. Interlanguage and the pro-drop parameter. *Second Language Research* 2.33-52.

Hirakawa, M. 1990. L2 acquisition of English reflexives by speakers of Japanese. *Second Language Research* 6.60-85.

Hulk, A. 1991. Parameter setting and the acquisition of word order in L2 French. *Second Language Research* 7.1-34.

Hyams, N. 1986. *Language acquisition and the theory of parameters*. Dordrecht; Reidel.

Hyltenstam, K. 1984. The use of typological markedness conditions as predictors in second language acquisition: the case of pronominal copies in relative clauses. *Second languages: a cross-linguistic perspective* ed. by R. Andersen. Rowley, MA: Newbury House.

Johnson, J. 1988. Critical period effects on universal properties of language: the status of subjacency in the acquisition of a second language. Unpublished doctoral dissertation, University of Illinois, at Urbana-Champaign.

Kellerman, E. 1978. Transfer and non-transfer: where are we now? *Studies in Second Language Acquisition* 2.37-57.

Liceras, J. 1988. Syntax and stylistics: more on the pro-drop parameter. *Learnability and second languages: a book of readings* ed. by J. Pankhurst, M. Sharwood Smith, and P. Van Buren. Dordrecht: Foris.

Liceras, J. 1989. On some properties of the "pro-drop" parameter: looking for missing subjects in non-native Spanish. *Linguistic perspectives on second language acquisition* ed. by S. Gass and J. Schachter. Cambridge: Cambridge University Press.

Lightfoot, D. 1989. The child's trigger experience: Degree-0 learnability. *Behavioral and Brain Sciences* 12.321-375.

Phinney, M. 1987. The pro-drop parameter in second language acquisition. *Parameter setting* ed. by T. Roeper and E. Williams. Dordrecht: Reidel.

Pinker, S. 1989. *Learnability and cognition*. Cambridge, MA; MIT Press.

Schachter, J. 1988. Second language acquisition and its relationship to Universal Grammar. *Applied Linguistics* 9.219-235.

Schachter, J. 1989. Testing a proposed universal. *Linguistic perspectives on second language*

acquisition ed. by S. Gass and J. Schachter. Cambridge: Cambridge University Press.
Schachter, J. 1991. On the issue of completeness in second language acquisition. *Second Language Research* 6.93-124.
Schwartz, B. 1987. The modular basis of second language acquisition. Unpublished doctoral dissertation, University of Southern California.
Schwartz, B. and Tomaselli, A. 1990. Some implications from an analysis of German word order. *Issues in Germanic syntax* ed. by W. Abraham, W. Kosmeijer, and E. Reuland. The Hague: Mouton.
Thomas, M. 1990. Acquisition of the Japanese reflexive zibun by unilingual and multilingual learners. *Proceedings of SLRF 1990.* Eugene, OR: University of Oregon.
Thomas, M. 1991. Universal Grammar and the interpretation of reflexives in a second language. *Language* 67.211-239.
Travis, L. 1984. Parameters and effects of word order variation. Unpublished doctoral dissertation, MIT.
Wexler, K. and Manzini, R. 1987. Parameters and learnability in binding theory. *Parameter Setting* ed. by T. Roeper and E. Williams. Dordrecht: Reidel.
White, L. 1985. The pro-drop parameter in adult second language acquisition. *Language Learning* 35.47-62.
White, L. 1986. Implications of parametric variation for adult second language acquisition: an investigation of the 'pro-drop' parameter. *Experimental approaches to second language acquisition* ed. by V. Cook. Oxford: Pergamon Press.
White, L. 1988. Universal grammar and language transfer. *Learnability and second languages: a book of readings* ed. by J. Pankhurst, M. Sharwood Smith, and P. Van Buren. Dordrecht: Foris.
White, L. 1989a. *Universal grammar and second language acquisition.* Amsterdam; John Benjamins.
White, L. 1989b. The principle of adjacency in second language acquisition: do L2 learners observe the subset principle? *Linguistic perspectives on second language acquisition* ed. by S. Gass and J. Schachter. Cambridge: Cambridge University Press.
White, L. 1990a. Implications of learnability theories for second language learning and teaching. *Learning, keeping and using language* ed. by M.A.K. Halliday, J. Gibbons, and H. Nicholas. Amsterdam: John Benjamins.
White, L. 1990b. Another look at the logical problem of foreign language learning: a reply to Bley-Vroman. *Linguistic Analysis* 20.50-63.
White, L. 1991. Adverb placement in second language acquisition: some effects of positive and negative evidence in the classroom. *Second Language Research* 7.133-161.
Zobl, H. 1988. Configurationality and the subset principle: the acquisition of V¢ by Japanese learners of English. *Learnability and second languages: a book of readings* ed. by J. Pankhurst, M. Sharwood Smith, and P. Van Buren. Dordrecht: Foris.
Zobl, H. 1989. Canonical typological structures and ergativity in English L2 acquisition. *Linguistic perspectives on second language acquisition* ed. by S. Gass and J. Schachter. Cambridge: Cambridge University Press.

Afterword

Susan Gass and Larry Selinker

We hope that a careful reading of the chapters in this volume has given the reader a sense of the pervasiveness of the phenomena underlying language transfer and the centrality of language transfer to the process of second language acquisition. We find the evidence presented here for the importance of language transfer overwhelming and hope issues in language transfer will be the object of research in the coming years (cf., Odlin [1989] and Kellerman and Sharwood Smith [1986] for additional work in this area). In these final comments, we wish to list and briefly describe a few important issues for the reader.

It should be apparent that there is a wide range of conceptions of the notion of language transfer. As Ard and Homburg say [Chapter 4], we see more of a 'genealogy' than a true history), ranging from Lado's concept of having the learner transfer "the forms and meanings and the distribution of forms and meanings..." (1957: 2) from a native language to the second language to Schachter's concept of transfer as "a constraint on the learner's hypothesis testing process" (p. 32, Chapter 3) to White's [Chapter 12] conceptualization of the NL within parameter theory. Ard and Homburg show that an operational approach to the concept is valuable under clearly stated conditions.

In recent years, many second language acquisition scholars have found themselves uneasy in using the term 'transfer' for native language influences in learner behaviour because of its past association with a different school of language use and language learning (cf., Corder, Chapter 2). Since there has been difficulty in unambiguously identifying language transfer phenomena, authors in this volume have attempted to be as precise as possible in defining language transfer and in establishing criteria for determining that language transfer has occurred.

We now list a few of the important issues in language transfer studies which have been raised in this book. This list is to us representative of the recurring themes in transfer research; it in no way pretends inclusiveness.

1. *Definitions of transfer.* Relating to the determination of transfer is the thorny issue of what exactly language transfer is. Many authors in this volume

have broadened and expanded the concept of language transfer from the traditional view expressed by Lado and his contemporaries. Ard and Homburg [Chapter 4], for example, investigate transfer with regard to differential learning patterns. Schachter (Chapter 3), in considering the influence of prior knowledge, incorporates not only native language knowledge but also developing knowledge of the L2. What we can conclude is that for most researchers, language transfer is the use of native language (or other language) knowledge--in some as yet unclear way--in the acquisition of a second (or additional) language. Depending on the author, the definition includes factors such as avoidance strategies, overproduction of elements, additional attention paid to the target language (resulting in more rapid learning). White [Chapter 12] defines transfer within a Universal Grammar framework, arguing that this framework allows for fundamentally different predictions and explanations about the role of the NL than earlier models.

2. *Domains of language transfer.* What information do we have about language transfer and under what conditions? For example, Corder [Chapter 2] suggests transfer effects are more prevalent in the classroom than out. Gundel and Tarone [Chapter 6] point out that what is needed is a systematic comparison with the same speakers in different stylistic domains.

3. *What is transferred*? Another related issues is exactly what is transferred from one language to another. Not only have we seen in this volume evidence for the transfer of linguistic elements, we have also seen, for example, evidence of 1) rule transfer and 2) strategy transfer.

4. *Multi-language prior knowledge.* Zobl [Chapter 10] considers the extent to which knowledge of more than one non-native language affects the second language, considering in particular the degree to which learners with multi-language prior knowledge create wider L2 grammars than do those with unilingual knowledge.

5. *Universals.* Two chapters deal explicitly with language universals, albeit from different perspectives. Gundel and Tarone [Chapter 6] relate language transfer to the overall concept of typological universals. White [Chapter 12], on the other hand, treats transfer as an 'access to UG' issue.

6. *Fossilization.* In a number of studies, language transfer has been seen to relate to fossilization, i.e., the cessation of IL learning often shown by the permanent failure of L2 learners to acquire a feature of the target language. In previous literature it has been pointed out that retardation of development occurs in areas where there is congruence between a developmental feature

and a feature of the native language (Zobl, 1980; Andersen, 1983; Kellerman, 1983). It appears that this congruence may prolong the restructuring of a particular rule and eventually lead to a fossilized form. Selinker and Lakshmanan [Chapter 11] modify the definition of fossilization to an empirically more manageable concept of 'plateaus' in L2 learning rather than cessation of learning. Clearly, it is impossible to show that a given individual has stopped learning. Importantly, they question to what extent transfer is a precondition for fossilization. Scarcella [Chapter 8] and Bartelt [Chapter 7] both deal with proficient L2 speakers, similarly suggesting a close relationship between fossilization and transfer.

7. *Bidirectionality.* Gundel and Tarone [Chapter 6] claim bidirectionality in that their 'facilitation hypothesis' can be applied equally to speakers of language A learning language B and speakers of language B learning language A. The significance of studies in bidirectionality is further discussed in Chapter 1.

8. *Prediction of Language Transfer.* By prediction we mean: what can we as researchers predict will or will not be transferred? As discussed in the introduction, there are constraints on language transfer which go well beyond mere similarity and dissimilarity of the two languages involved. These constraints ultimately involve the learner as an active participant in the learning process, one who makes 'decisions' about what can and cannot be transferred. Broselow [Chapter 5] discusses phonological transfer which is dependent on the function of the rules in question. She suggests that those rules which result in a more systematic interlanguage are most likely to be transferred. Ard and Homburg [Chapter 4] claim that there are certain conditions under which transfer will always occur, but when these conditions are not met, transfer may or may not occur. Selinker and Lakshmanan [Chapter 11] deal with predictability in the sense of the role of transfer in predicting fossilization. White [Chapter 12], taking a different theoretical perspective, discusses prediction in terms of UG parameters considering in particular the nature of parameter resetting.

What we can conclude from the chapters in this volume and from research on transfer during the last decade or so is that transfer is predictable in a probabilistic sense *if* other than purely linguistic factors are taken into account.

This brief *Afterword* has brought together some of the common and important threads we have seen discussed in this volume. We hope that these threads form the impetus for future research in this area, research which will undoubtedly expand, refine and even redefine the issues.

REFERENCES

Andersen, R. 1983. Transfer to somewhere. *Language Transfer in Language Learning*. ed. by S. Gass and L. Selinker. Rowley. Newbury House. 177-201.

Kellerman, E. 1983. Now you see it, now you don't. *Language Transfer in Language Learning*. ed. by S. Gass and L. Selinker. Rowley. Newbury House. 112-134.

Kellerman, E. and M. Sharwood Smith. 1986. *Crosslinguistic Influences in Second Language Acquisition*. New York. Pergamon Press.

Lado, R. 1957. *Linguistics Across Cultures*. Ann Arbor. University of Michigan Press.

Odlin, T. 1989. *Language Transfer*. Cambridge. Cambridge University Press.

Zobl, H. 1980. Developmental and transfer errors: their common bases and (possibly) differential effects on subsequent learning. *TESOL Quarterly*.14.469-479.