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Differences in ESL Lexical Boundary Acquisition:
A Look at L2 English Boundaries of Native German Speakers
According to Length of Residence in the United States

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At the 1983 DLLS Symposium, Graham and Belnap reported a preliminary study investigating the acquisition of English lexical boundaries by native German and Spanish speakers. Their research suggests that there is L1 lexical boundary interference in the learner's L2. This paper is a follow-up study to their research.

The area of semantics and the lexicon has been a sore spot for linguistic science (Weinrich, 1966, p. 53; Labov, 1973, pp. 340-41). Little is know about the relationship of the L1 lexicon to that of the L2 and the effect which the language learner's native lexical boundaries have on his or her L2 lexical boundaries. Still less is known about the effect of time in residence in the L2 environment on the lexicon of the L2; and perhaps least of all is known about the effect of the L2 lexical boundaries, as well as extended residence in that L2 environment on a speaker's L1 lexical boundaries (Haugen, 1969, pp. 467-474).

The Graham and Belnap study (1983b) raised the questions which this paper investigates: 1) Does length of residence in the L2 environment affect L2 lexical boundary acquisition? if so, how? and 2) Does length of residence in the L2 environment affect the L1 lexical boundaries? and if so, how?

Review of the Literature
Graham and Belnap's study (1983b) focused on the referential domain of certain lexical items, such as cup, glass, chair, and stool, which could be represented in line drawings and varied according to height and width. For example, data was gathered to determine at what width a chair becomes a bench in the judgement of native and L2 English speakers. ESL data was collected from native German, Spanish, and Arabic speakers; data was also collected in the native languages of these German, Spanish, and Arabic speakers. The native German, Spanish, and Arabic lexical boundaries were compared with the corresponding ESL boundaries, which in turn were compared with English L1 lexical boundaries in order to determine if the ESL lexical boundaries corresponded to the native English boundaries and if they did not, to determine if L1 lexical boundaries were a source of interference. As mentioned, interference did appear to affect ESL lexical boundaries. Further, it was noted that the native Arabic speakers' ESL lexical boundaries were most like those of the native English speakers; on the average, the Arabic speakers had been in the U.S. longer than either the native German or Spanish speakers. In addition, preliminary analysis suggested that there were differences between the lexical boundaries of those German speakers who had lived in the U.S. over 10 years and those who had lived in the U.S. but a short time.

Other studies, which were reviewed in depth in Graham and Belnap (1983a), include the following: Strick (1980) investigated the
acquisition of American terms of address by Farsi speakers living in the U.S. and found that they retained socio-linguistic elements of their native terms of address in their use of the American terms of address. Kellerman (1977) studied the transferability of concrete and metaphorical uses of a Dutch cognate into English and found that concrete meanings were more transferable.

Nash (1976) investigated the occurrence of positive and negative cognate transfer from Spanish to English. She also illustrated differences between the lexicon of native English speakers and the lexicon of ESL speakers whose native language was Spanish. She pointed out that due to the restricted size of the ESL learner's English vocabulary the learner uses various communicative strategies, such as borrowing terms from the Spanish L1, in order to express him- or herself. She emphasized that "one's native language, materialized in its vocabulary, is a powerful force in all future linguistic experience" (Nash, 1976, p. 165).

Bennion, a presenter in the 1983 DILL Symposium, discussed the effects of L2 on L1, particularly concerning reading skills. She focused on a review of the literature and on a study she conducted with native English speakers in advanced Spanish classes investigating their reading speed in English. In her review of the literature, she mentioned two types of lexical transfer which Kinzel (1964) reported in his bilingual daughter's speech. The first, "outright transfer" is the direct borrowing of a term from one language into another. The second, "extension" is the use of a term in one language using the lexical boundary of a term in another language. This corresponds to a native English speaker using heiss (hot) instead of scharf (sharp) to refer to a spicy food.

Bennion also cited a study done by Elena Batista-Wallace (1977) which studied the effects of L2 acquisition on the L1 of bilingual children. She found that the L2 was a source of interference in the L1 on the productive level but not on the receptive level.

Ervin-Tripp studied bilinguals use of color terms and their lexical boundaries and found that the two languages, English and Navaho, interfered with each other (Ervin-Tripp in Dil, 1973).

Hypotheses
None of these studies has looked at the length of residence as a moderator variable affecting L1 or L2 lexical boundaries. From the review of the literature it is evident that there is interlingual interference in the L1 and L2 lexical boundaries. It seems to logically follow that: 1) Length of residence in the L2 environment affects the L2 lexical boundaries of the language learner. 2) Length of residence in the L2 environment affects the L1 boundaries.

Research Design
The primary data which was used in this study came from the Graham and Belnap study (1983b). Subjects were 40 native German speakers and 120 native English speakers all of whom resided in Northern Utah. The German speakers were from the Federal Republic of Germany, the German Democratic Republic, Switzerland, and Austria. Most of the German speakers were undergraduate and graduate students. There was more
diversity in age, country of origin, and educational background among the native German speakers because there were no large concentrations of them in the area. Data was collected from such a varied population of ESL learners in order to examine the effects of longer residence in the U.S. on the learners' lexical boundaries; a homogeneous group with both shorter and longer residence in the U.S. was not available. The native English speakers were primarily from Utah, Idaho and California; they were all students enrolled in Freshman and Sophomore English classes at BYU.

The instrument in the Graham and Belnap study (1983b), as well as this study, was developed by Labov (1973) to investigate denotation by native English speakers. It enables the researcher to isolate lexical boundaries. Subjects were presented line drawings, one after another, of a number of objects which were varied along the height and width dimensions. The subjects chose responses from the multiple-choice answer booklet to refer to the drawings in the picture book and marked their responses on the computer-scored answer sheet. There were 90 items.

Order of presentation of the drawings was varied in the original Graham and Belnap study and was found to have no statistically significant effect on the subjects' responses for all but a few items.

Data were collected in the English L1, in the English L2, and in the German L1. The data was then graphed for each set of items and then the ESL graphs were compared to the native German graphs and to the native English graphs to determine whether the ESL data more closely resembled the native German data or the native English data. If the ESL data was closer to the native German data then the subject had retained his native lexical boundaries for those items. If the ESL data was closer to the native English data then the subject had acquired the native English boundaries for those items.

For the present study, length of residence in the L2 environment was a moderator variable. Therefore, the German data was split up into two groups, those who had lived in the United States for 1 1/2 years or less and those who had lived in the U.S. for over 10 years. The specific lengths of residence were chosen so as to divide the speakers up so that there were as many as possible in each group, still retaining the data pattern characteristics of subjects with shorter and subjects with longer L2 residence. Dr. Cheryl Brown has since brought it to my attention that Olshtain and Blum-Kulka (1983) found that 10 years is the approximate time required for bilinguals to acquire the socio-linguistic rules of the L2. As for group size, Labov found that he obtained reliable data with groups as small as 10. In this study, even with a group as small as 6, subjects patterned together rather closely.

Results and Discussion

Graph Set 1 is an example of where those with longer L2 residence have more nearly acquired the boundaries of a term than those with less residence. In the "10+ years" ESL data, we find that these native German speakers have used the term mug much more than have those native German speakers with only 1 1/2 years residence. Those with 1 1/2 years residence have used mug, but as can be seen this use identically
parallels that of their native Krug boundary. It is not surprising that some of those with less L2 residence have not acquired mug as it is low in frequency.

In Graph Set 2, we find that even though the native German boundaries for Stuhl and Bank correspond almost exactly with the native English boundaries for chair and bench, still 30% of those German speakers with less L2 residence used stool to refer to items which native English speakers referred to as chair. It appears that the phonological similarity between the cognate Stuhl and stool resulted in the negative transfer of L1 boundaries into the L2 English. The three subjects who used stool to refer to the items in set 6 had less than one year of residence in the L2, and two of the three did not live with native English speakers. It also appears that some native German speakers feel that a chair must have arms (perhaps corresponding to their native Sessel), otherwise they call it a stool—in either case it is evidence of interference from the native German.

Increased length of residence does not always result in boundaries which are more like the TL. In Graph Set 3, the ESL lexical boundaries of those with less L2 residence are more like the native English boundaries than are the boundaries of those German speakers with more L2 residence. It is noteworthy that the lexical boundaries of both groups for cup parallel their native Tasse boundaries suggesting native language interference. It is possible that there has been some diachronic change in the use of Tasse in the last 30 or 40 years which would account for the differences in the two groups.

In Graph Set 4, the native German boundaries for Stuhl are not parallel to each other although the two ESL boundaries are. 40% of those with longer L2 residence used Stuhl to refer to items in Set 5 which none of those with shorter L2 residence would call a Stuhl. The four who used Stuhl for these items had lived in the U.S. 21 years or more (they were over 41 years old). It is also interesting that these four native German speakers teach German; one is a high school teacher and the other three are university professors. Here again, it is probably the phonological interference of stool with Stuhl which influenced these subjects—but this time the interference was in the other direction, i.e. from L1 to L2. Some of the subjects mentioned they were thinking of a barstool. They used Stuhl (chair) for the semantic content of the phonologically similar stool.

One other item of interest was how long some native German speakers retain their L1 lexical boundaries for Stiefel. In the data for Set 5, we find that three of those with over 21 years of residence used Schuh to refer to even the tallest of these items. Unfortunately, two of the three did not complete the ESL portion of the instrument—however, the third carried her lexical boundaries for Stiefel over into her L2; she used shoe for these tallest items, even when they had a vibram-type sole. While collecting the data for this woman's boundaries, I noticed that she had been extremely affected by her 59 years of residence in the U.S. (she was 24 when she immigrated with her husband). Even though most of her other boundaries show some of the most marked interference of all those that were tested, still she had retained her boundary for Stiefel which turned out to be that a Stiefel has no laces. There were
also two people who were between 21 and 25 years old who had the same boundaries for Stiefel.

Instances such as these aroused suspicions as to whether or not the terms which the subjects used in the instrument actually corresponded to their performance model. I probably felt this way because the subjects' boundaries did not correspond to mine and in some instances didn't seem to correspond to those of other native speakers. My doubts centered on the lexical boundaries of common words such as chair or Stiefel and not on the low-frequency words that a subject might try and guess (though I do not feel there was much of this). After administering the instrument I would quiz the subjects on their boundaries by referring to objects in the room and found that the terms they had used in the instrument did in fact correspond to their productive lexical boundaries.

Summary of Findings

From the above data it does appear that ESL boundaries are affected by length of residence in the L2 environment. Generally, the ESL graphs of those with longer residence in the U.S. more closely paralleled the native English data graphs than did the graphs of those German speakers with less U.S. residence. This was particularly the case with terms which are low in frequency, such as stool and mug.

Frequently, subjects asked what an item was made of or what it was used for. Labov's study (1973) and a pilot study of mine (Belnap, 1982) indicated that composition and context affect denotation considerably. However, data from a neutral context also proved to be valid and reliable.

Naturalistic data is admittedly preferred. However, collecting a sampling of unmonitored language use that could yield lexical boundaries far exceeds time and means constraints. Despite the manner of elicitation, the instrument appeared to be an accurate measure of productive knowledge. A subject's feeling for a word was generally good, though he or she may not have normally felt comfortable in using the term. When the subjects did not feel they knew what to call an item they chose the "none of these" option; this choice was not an uncommon one.

The use of low-frequency words is a problem which is hard to get around--and perhaps undesirable to avoid. The referential world is full of items which are referred to with low-frequency words which the language learner must deal with.

The terms or possible responses which were selected for use in the instrument were taken from the responses of native English speakers for the English instrument and native German speakers for the German. It might have been wise to collect some ESL free response data as well, from which we could have taken possible responses for the multiple-choice answer sheet.

It would also have been valuable to collect German data from native speakers living in Germany, Switzerland and Austria with which to compare the German L1 data of those living in the U.S.. Comparison of lexical boundaries of subjects of similar age and background would be
desirable. This applies to dialect background as well. It appears that in this study we did not have interference from dialects as the terms which were chosen are quite common. More data is needed to be certain.

It would also be interesting after administering the instrument to collect introspective data from native English speakers, native German speakers, and ESL learners on their criteria for calling an item by a given term. Much of what was learned about lexical boundaries came from what subjects said as they were working through the instrument.

From this and other studies which have been conducted it is evident that we cannot assume that language learners automatically adopt the native boundaries of L2 lexical items, whether these are learned in the classroom or in a naturalistic setting. Studies such as these should act as a caution for the teacher to be conscientious in helping students to realize that although language form may be parallel, function does not necessarily follow suite. Lexical items may appear to be equivalent but one to one correspondence of the boundaries of these items should not be assumed. And of course, it follows that as language learners we may need to examine our attitudes and practices in learning vocabulary.


Kinzel, Paul F., "Lexical and Grammatical Interference in the Speech of a Bilingual Child," Studies in Linguistics and Language Learning,


English Native Language
N=133

Graph Set 1
Cups with handles increasing in height.

English as a Second Language
German-speakers with 1½ years of residence
N=10

English as a Second Language
German-speakers with 10+ years of residence
N=6

German Native Language
N=10

German Native Language
N=10
Graph Set 2

Chairs increasing in width.

English Native Language
N=133

German-speakers with 1½ years of residence
N=10

Stool

Chair

German-native Language
N=10

Bank

Stuhl

German-speakers with 10+ years of residence
N=6

Bench

Chair

Chart showing the percentage of responses for different chair widths for English and German native speakers and German-speaking English as a Second Language individuals with varying years of residence.
Graph Set 3
Cups without handles increasing in height.

English Native Language
N=133

German Native Language
N=10

English as a Second Language
German-speakers with 1½ years of residence
N=10

German Native Language
N=10

German as a Second Language
German-speakers with 10+ years of residence
N=6
Graph Set 4

Stools increasing in height.

English Native Language

N=133

English as a Second Language
German speakers with 1½ years of residence
N=10

English as a Second Language
German speakers with 10+ years of residence
N=6

German Native Language
N=10

German Native Language
N=10
Shoes with laces increasing in height.