Use and acquisition of idiomatic expressions in referring by native and non-native speakers

Heather Bortfeld[a]; Susan E. Brennan[b]

[a] State University of New York, Stony Brook [b] Department of Psychology, State University of New York, Stony Brook, NY

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Use and Acquisition of Idiomatic Expressions in Referring by Native and Non-Native Speakers

HEATHER BORTFELD
SUSAN E. BRENNAN
State University of New York at Stony Brook

When referring repeatedly to an object in conversation, two people typically come to use the same expression, a phenomenon called *lexical entrainment* (Brennan & Clark, 1996; Garrod & Anderson, 1987). But what happens when one partner is not as linguistically skilled as the other? In three experiments, we examined how native and non-native speakers adjust their referring expressions to each other in conversation. Twenty Asian language speakers learning English were tested before and after conversations with native English speakers in which they repeatedly matched pictures of common objects (Experiment 1). Lexical entrainment was just as common in native/non-native pairs as in native/native pairs. People alternated director/matcher roles in the matching task; natives uttered more words than non-natives in the same roles. In Experiment 2, 31 natives rated the pre- and post-test expressions for naturalness; non-natives' post-test expressions were more natural than their pre-test expressions. In Experiment 3, 20 natives rated expressions from the transcribed conversations. Native expressions took longer to rate and were judged less natural-sounding when they were addressed to non-natives than to other natives. These results are consistent with Clark and Wilkes-Gibbs's (1986) principle of Least Collaborative Effort.

Consider the predicament of Anna, a student from abroad, who has just arrived in the United States to begin graduate school. In need of furniture for her new apartment, she visits a department store to buy some chairs. Unfortunately, her classroom English did not include any training for a task like this one. Anna knows the word *chair*, but she does not have any idea what to call the particular kind of chair she has in mind. She tries to describe it to a helpful sales clerk. Assuming that these two are able to communicate successfully, what will Anna have acquired from

this interaction (besides chairs)? Interacting with native speakers may help her learn idiomatic English expressions (such as *folding chair, rocking chair,* or *armchair).* Presumably, if she has enough conversations with native speakers, she will acquire a larger vocabulary and her command of English will become more idiomatic.[1]

That conversation facilitates vocabulary acquisition has been argued by many second language (L2) researchers (Hatch, 1978, 1983; Krashen, 1981, 1982, 1985; Long, 1981, 1983, 1985; Pica, 1994). There are various proposals for how this happens. One is that non-native speakers acquire vocabulary from hearing *comprehensible input* produced by native speakers (Krashen, 1985). According to this proposal, non-natives learn best when they hear expressions that are comprehensible, grammatically correct, and at least one step beyond what they already know (Krashen, 1985). This proposal focuses on the native speech input that non-native speakers hear and assumes that comprehensibility is a feature of input messages. Another approach focuses on special strategies by non-native speakers to compensate for gaps in their lexical knowledge (Færch & Kasper, 1983; Tarone, 1980, 1981), such as describing an object that they do not have a label for. A third proposal is that special strategies are used by native speakers as well, such as adjusting their speech to non-natives to be slower, more redundant, and less complex (Hatch, 1983; Long, 1985). In addition to these approaches that focus on what either the native speaker or the non-native speaker does, other approaches focus on the interaction between them, or on what has been called *negotiation* (Hatch, 1978, 1983; Larsen-Freeman & Long, 1991; Long, 1981, 1983, 1985; Pica, 1994; Pica & Doughty, 1985; Tarone, 1980, 1981), holding that native speakers make certain adjustments in the way they interact with non-natives. For instance, native speakers have been observed to seek clarification, repeat and expand utterances, and check on their partners' understanding more often in talking with non-native speakers than with other natives (Larsen-Freeman & Long, 1991; Pica, 1994). Sometimes such interactive strategies have been assumed to be specific to native/non-native conversations (for a critique of this assumption, see Bongaerts, Kellerman & Bentlage, 1987; Bongaerts & Poulisse, 1989; Kellerman, 1990). These approaches to L2 acquisition in conversation are not mutually exclusive; they differ in their focuses on different features of native/non-native interaction. In general, they emphasize differences between native/non-native conversations and native/native conversations, rather than similarities.

Here, we begin with a general theoretical framework of human communication—the collaborative framework developed by Clark and his colleagues (Clark, 1992)—and consider the possibility that what native and non-native speakers do in conversation can be explained within that framework. According to the collaborative framework, people in conversation reach an appropriate level of confidence that they understand one another by engaging in the process of *grounding.* That is,

they seek and provide evidence that their beliefs have converged closely enough for the purposes at hand (Brennan, 1990; Clark & Brennan, 1991; Clark & Schaefer, 1989; Clark & Wilkes-Gibbs, 1986). This evidence may take the form of a relevant next utterance, acknowledgment, or action. We expect that, like people from the same language community, two people from different language communities will attempt to get their beliefs to converge via the grounding process, although this process will probably require more effort than if they were both native speakers. In the collaborative framework, comprehensibility is not a feature of messages (independent of speakers and addressees), but arises from the interactive construction of meaning between a *particular* speaker and addressee.

We focus on referring expressions in conversations. There are, potentially, many labels by which people can refer to a given object (Bolinger, 1977; Brennan & Clark, 1996; E. V. Clark, 1987; Furnas, Landauer, Gomez & Dumais, 1983), and yet two native speakers typically come to use the same terms when they refer repeatedly to the same object in a conversation. This marks their belief that, for current purposes, they share a perspective on that thing (Brennan & Clark, 1996; Garrod & Anderson, 1987). This convergence of terms has been called *lexical entrainment* (Garrod & Anderson, 1987). When a speaker first refers to an object, as with "a folding chair," her or his referring expression functions as a proposal to her or his addressee that they conceptualize the object as a folding chair, as opposed to simply a chair; if the addressee agrees to this proposal, then he or she will use the same (or a closely related) term in future references (Brennan & Clark, 1996). Note that the second speaker *could* propose a different term or modify the first speaker's term; this can be done either implicitly, by simply producing a new term without comment, or explicitly, by commenting on or questioning the first term (Jefferson, 1982).

In our opening example, imagine that Anna says to the sales clerk, "I need a chair that can be *flattened*." Puzzled, the clerk may propose a different phrase (one that may or may not be acceptable to Anna): "Do you mean one with a thick cushion?" But replacing a term already proposed generally takes more effort (e.g., in the form of more conversational turns). So an efficient way for two people to arrive at the same term for an object is for the second speaker to take up the term that the first speaker proposes, as long as he or she finds the conceptualization that it implies acceptable for current purposes. Solving Anna's problem might then result in the sales clerk's adopting (for the moment) the idiosyncratic term that Anna has proposed (and so if the clerk recognizes that Anna intends to refer to folding chairs, the clerk might even say something like "we have several kinds of chairs that flatten").

We pursue several goals in this article. First, we examine whether lexical entrainment is as common in conversations between a native speaker and a

non-native speaker as it is in conversations between two native speakers. Second, we examine the consequences of lexical entrainment on idiomatic vocabulary acquisition by non-native speakers. When a non-native speaker adopts an expression proposed by a native speaker in referring to a particular object, that is good evidence that the non-native believes she understands the expression. But does this result in idiomatic language learning? A third goal is to discover how natives and non-natives adapt to one another in the referring expressions they choose: When they do converge on the same expression, is this due to the non-native speaker adopting the native speaker's idiomatic expression, or does the native speaker ever abandon an idiomatic expression in order to adopt one that is more acceptable to the non-native? With these goals in mind, we sketch two hypotheses about L2 vocabulary acquisition in conversational settings: *Ideal Input* and *Least Collaborative Effort*.

IDEAL INPUT HYPOTHESIS

Virtually all theories of L2 acquisition emphasize the importance of the input that non-native speakers receive as they move in the direction of the target (i.e., toward native-like competence in the new language). We refer to the idea that native speech represents an idiomatic target that non-native speech moves toward as the Ideal Input hypothesis. This idea presumes that comprehensibility is an attribute that a message has (more or less) for a non-native speaker at a particular level of L2 competence, and that native speakers consistently produce meaningful, grammatically correct, and idiomatic messages. This is not to say that native speakers are never disfluent, only that they should speak just as fluently to non-natives as to other natives. Although native speakers may adapt their speech to non-natives in certain ways (e.g., to be slower, redundant, and less complex), their referring expressions will still be idiomatic; that is, they won't adopt the non-idiomatic expressions that might be produced by non-natives. Ideal Input also presumes that whenever non-native speakers find unfamiliar expressions produced by native speakers both comprehensible and memorable, they should learn them and adopt them in future references.

If the assumptions of the Ideal Input hypothesis are correct, then we would expect lexical entrainment to happen less often in conversations between non-native and native speakers than between two native speakers. This would be the case because in order to converge on terms with the native speaker, the non-native speaker would often be burdened with having to learn new, idiomatic terms, and these will not always be comprehensible. The only way for lexical entrainment to occur would be for non-native speakers to use the same idiomatic terms used by native speakers.

Ideal Input accounts for L2 acquisition by focusing on the comprehensibility and grammaticality of the input message; it does not lead to any clear predictions about how a particular native speaker might adjust to a particular non-native (other than making generic adjustments such as speaking more slowly) or about how they might distribute their relative effort in a conversation.

LEAST COLLABORATIVE EFFORT HYPOTHESIS

The principle of Least Collaborative Effort (Clark & Wilkes-Gibbs, 1986) holds that two speakers try to achieve a level of mutual intelligibility sufficient for their current purposes, and in doing so, they collaborate; that is, they work together to minimize the effort they expend collectively. One person may put in extra effort if something is easier for her[1] to do than for her partner, or to save them both from having to put in more effort to repair a misunderstanding later. If one person knows that she has information that the other needs to know, it is more efficient for her to take the initiative and provide the information than to wait for the other to request it (Brennan, 1990). When two people are not equivalent in their relevant knowledge or ability, producing referring expressions is especially likely to bear different costs for each of them, and they should each adapt accordingly. With the Least Collaborative Effort hypothesis, both partners should adapt their referring expressions to each another. Also, there should be just as much lexical entrainment in conversations between partners with different competence in a language as between partners with equal competence.

One study particularly relevant to the Least Collaborative Effort hypothesis examined conversations between people whose knowledge in a particular task domain was out of balance (Isaacs & Clark, 1987). Experts (native New Yorkers) and novices (non-New Yorkers) who were visually separated matched identical sets of postcards of New York City. The experts began by referring to landmarks using proper names that novices could not understand (e.g., "the World Trade Center"), whereas the novices began with descriptions that were not entirely acceptable to the experts (e.g., "the picture of a tall building with a cloud in the upper right hand corner"). The experts and novices quickly adjusted to one another, usually without explicitly discussing their differences. Over six matching trials, the experts adapted their references to provide more information, and the novices adapted by learning some proper names.

Just as the experts and novices in Isaacs and Clark's experiment adapted to each other in conversation, so should native and non-native speakers. The Least Collaborative Effort hypothesis predicts that not only should non-native speakers sometimes learn and adopt expressions from natives, but natives should sometimes adopt the terms of non-native speakers, perhaps even sacrificing idiomaticity for

comprehensibility. Consequently, although conversation may provide an effective setting for vocabulary acquisition, the goal of communicating is likely to take precedence over acquisition (unlike in an L2 classroom). Another prediction is that because of the imbalance in their language competence, native and non-native speakers should distribute their effort differently than pairs of native speakers, meaning that in mixed pairs, native speakers should utter relatively more words than non-native speakers in the same role.

In three experiments, we examined how native and non-native speakers in conversation refer to common objects. In the first experiment, pairs of strangers referred repeatedly to the objects in order to do a task. Although these conversations took place in the laboratory and the participants adopted the goals provided by the task, there is every reason to believe that they were genuinely engaged in communication. They had to communicate to succeed at the task, and every pair performed extremely well. Although not all conversations have such a strong instrumental component, getting an addressee to pick out an intended object from a set is a very common conversational goal, and the task enabled us to gather ample data about people's choices of referring expressions. In the second experiment, a new group of participants rated the pre- and post-test expressions for naturalness, and in the third experiment, another group of participants rated referring expressions from the conversations for naturalness.

EXPERIMENT 1: CONVERSATIONS BETWEEN NATIVE AND NON-NATIVE SPEAKERS

Method

In Experiment 1, we examined the lexical choices made by native and non-native speakers during a referential communication task of the sort developed by Krauss and his colleagues (Krauss & Glucksberg, 1969, 1977; Krauss & Weinheimer, 1964, 1966, 1967). Pairs of people who could not see one another conversed in order to match pictures of different kinds of chairs, with one person acting as *director* and the other as *matcher*. In a pre-test before the communication task, each person provided a written label or description for each picture; they did this again after the task. This gave a baseline for their knowledge of idiomatic terms before the communication task and enabled us to measure any vocabulary acquisition that occurred during the task.

Design

Each pair participated in one of three conditions.

Condition 1 consisted of Same pairs, each with 2 native speakers of English.

Condition 2 consisted of Mixed pairs, with a native speaker as first director and a non-native speaker as first matcher.

Condition 3 also consisted of Mixed pairs, but with a non-native speaker as first director and a native speaker as first matcher.

Conditions 2 and 3 enabled us to compare the relative effort (in terms of number of words uttered) by native versus non-native directors faced with the task of referring to a particular chair for the first time in the task. There were 10 pairs in each condition, and each person participated in only one pair.

Participants

Sixty students from the State University of New York at Stony Brook volunteered to participate. Each was paid $5. Forty were native speakers of American English and 20 were foreign students from Asian countries (7 from Japan, 3 from Taiwan, 2 from Korea, and 8 from mainland China). Thirty four were women and 26 were men. Each student was paired with another of the same sex on the basis of availability. The native speakers were recruited from upper-division undergraduate psychology classes and the non-natives were graduate students recruited from *English as a Second Language* (ESL) courses. Only non-native speakers with *Test of English as a Foreign Language* (TOEFL) scores ranging between 500 and 600 were allowed to participate (scores can range from 200 to 800). TOEFL is a comprehension and writing test that does not involve spoken English; we used this test as a rough indicator of fluency because it is standard among foreign students. Graduate students with scores under 600 are typically asked to attend an ESL course in order to improve their English skills prior to serving as Stony Brook teaching assistants. However, even a score above 600 does not guarantee fluency in spoken English.

Materials

The materials were two identical sets of 15 photographs of ordinary chairs, taken from department store catalogues. Within a set, each chair was different. Each picture was mounted on a 3×5 inch card and laminated. The cards were numbered from 1 to 15 on the reverse side; these numbers were not visible during the card-matching task. The matching task was designed to be challenging for the non-native speakers (who were expected to know the basic level term "chair" but not many idiomatic subordinate terms).

Procedure

Pre-test. Each person did the pre-test individually, seated behind a barrier so that neither could see the other or the other's cards. A set of chair pictures ordered from 1 to 15 (according to the numbers on the reverse) was arranged by the

experimenter in front of each person. People were asked to imagine they were trying to help someone distinguish each chair from the set of 15 and to write down a description or term for each chair. Each person was given a form with the words *This chair is a(n)* ____ listed 15 times and numbered 1 through 15, with ample writing space.

Card-Matching Task. The pair then did the referential communication task, remaining seated on either side of the barrier. The 15 chair pictures were randomly rearranged by the experimenter on a 5×3 grid in front of each person. Both members of the pair knew that they had the same set of chairs but in different orders. They were told that they would take turns being director and matcher and that their goal was to get the matcher's cards arranged in the same order as the director's, starting with the card in the upper left and continuing from left to right. They were told to communicate freely but not to refer to the numbers on the backs of the cards. After they matched the 15 chairs, the experimenter rearranged their cards and had them switch director/matcher roles. They did this for a total of six trials, in order for both to have ample opportunities to propose referring expressions. They were told to be very accurate but to work quickly. The card-matching trials were audiotaped and videotaped, with only the cards and participants' hands visible on the screen.

Post-test. After the card matching task, participants were asked to fill out a form identical to the one they filled out for the pre-test, again describing or giving terms for each chair so that someone other than the person with whom they had just completed the matching task could distinguish that chair from the other 14.

Analysis

Transcribing. All conversation during the card-matching task was transcribed in detail, with notation of who was director and who was matcher at each point. The mean number of words directors and matchers used in each trial was computed.

Coding. Transcripts were coded for lexical entrainment (that is, whether or not both participants used the same term or phrase to refer to a chair), effort, and acquisition of idiomatic terms by the non-native speakers.

The first measure, entrainment, captured whether both members of a pair used the same expression for a particular chair in Trials 5 and 6. The two authors coded the transcripts independently, with agreement 97% of the time. Each pair of expressions was categorized according to six sets of criteria for (decreasing) convergence, ignoring determiners and the words *chair* and *seat*. Category 1 was verbatim equivalence; for instance, *the yellow bean bag* was counted as equivalent to *yellow bean bag chair* in this category. Category 2 was propositional equivalence, where both expressions contained the same content words, but in different orders or with different morphemes; in this category, *adjustable children's chair* was equivalent to *a child's adjustable chair*, and *the unpadded folding chair* was equivalent to *the folding chair with no pad*. Category 3 was for expressions that

were equivalent in content but with one slightly shorter than the other (by only one modifier or modifying phrase); the rationale for this is that speakers typically shorten references over repeated referring (Carroll, 1980; Clark & Wilkes-Gibbs, 1986; Isaacs & Clark, 1987; Krauss & Weinheimer, 1966, 1967; Kraut, Lewis & Swezey, 1982; Schober & Clark, 1989). So for Category 3, *the flowered lounge chair* would be considered equivalent to either *the lounge chair* or *the flowered chair*. For the analyses that follow, we considered pairs of expressions in these Categories 1–3 to be instances of lexical entrainment.

The remaining three categories (4–6) were considered to be failures to entrain on the same terms. Category 4 was when expressions in the last two trials contained all the same content words, except that where one director used word A, the other director used word B, as in *the wooden baby chair* versus *the wooden high chair*. Note that although many of the pairs of expressions in Category 4 gave evidence of some conceptual convergence between the partners, the two differing terms may still have represented a contrast in their conceptual perspectives. Expressions that had some content in common but did not meet the criteria of Categories 1–4, we placed in Category 5 (e.g., *the brown chair with the yellow stripes* and *the striped design*). Category 6 we used for expressions that were entirely different (e.g., *the booster seat* and *the red and white infant's seat*).

The next measure, effort, was counted as the number of words uttered by each pair to match each chair in each of the six trials. To compare the distribution of effort by both partners during the first trial, we counted the director's words separately from the matcher's for this trial.

To estimate acquisition, we coded two things: (a) idiomaticity, that is, whether an expression produced by a non-native speaker in a pre- or post-test matched any of those produced by a native speaker from a Same pair and (b) change, whether a given non-native produced the same expression for a given chair in both the pre- and post-tests. Then, to examine the relationship between entrainment and acquisition, we coded the degree to which non-natives' post-test expressions matched their entrained-on expressions (for those chairs where there was lexical entrainment).

For the idiomaticity coding, for each chair we listed all post-test expressions from native speakers who had been paired with other native speakers. For some chairs, all or nearly all the natives' expressions contained a key, lexicalized term or phrase. For instance, all 20 natives referred to one chair as a *rocking chair*, sometimes with a modifier such as *brown* or *wooden*; 15 natives referred to another chair as a *wicker chair*, sometimes with a modifier or two. For chairs like these, we coded a non-native's expression as *very idiomatic* when it consisted of the key term or when it contained, in addition, the same modifiers as natives had used. We coded the expression as *somewhat idiomatic* when it contained, in addition, material that

was not in any of the natives' expressions (e.g., *rocking chair with pieces of strips in back*). For other chairs, natives tended to provide longer, descriptive referring expressions (e.g., *chair with a cushioned seat and a metal back* for the restaurant-style chair), and so there was less agreement across conversations; in these cases, we coded a non-native expression as very idiomatic when it contained all of the same content words as any one of the native post-test expressions, or as somewhat idiomatic when it differed by one content word or modifier (e.g., *metal chair with golden strips in back*). All other expressions (differing from native expressions by two or more modifiers or content words) we coded as not idiomatic (e.g., *Italy black wooden chair with golden poles*). In addition, to be coded as idiomatic, an expression had to be free of grammatical mistakes (such as morphological or syntactic errors and unnatural adjective order). Both authors coded the transcripts independently and agreed 96% of the time.

To measure change from pre- to post-test, we examined each pair of expressions from the non-native speakers and determined whether one term contained the same content words as the other term. This told us whether a non-native speaker already knew particular terms before conversing with a native speaker. Finally, for each expression entrained upon by a Mixed pair, we coded the extent to which it matched the post-test expression produced by the non-native speaker in that pair.

Analyses. We report two analyses for each result; F_1 or t_1 is the analysis by-subjects (with pairs as the random factor), and F_2 or t_2 is the analysis by-items. Where appropriate, we conducted two planned comparisons of the effects of the three conditions, comparing (1) the Same condition to the Mixed conditions and (2) the Mixed conditions to each other.

Results and Discussion

Lexical Entrainment. There was just as much entrainment when native speakers conversed with non-natives as when they conversed with other natives. Table 1 summarizes the frequencies with which the two directors converged on the same terms in the last two trials, according to the six convergence categories. With Categories 1–3 from Table 1 considered as entrainment and Categories 4–6 considered as not entrainment, Same pairs entrained 62.7% of the time, Mixed (N/Non-N) pairs did so 62.0% of the time, and Mixed (Non-N/N) pairs, 52.7% of the time, $F_1(2, 27) = 1.15, p > .10; F_2(2, 28) = 1.64, p > .10$. Same and Mixed pairs converged just as often when a stricter criterion for equivalence was used (counting only the pairs of expressions in Categories 1 and 2): Same pairs entrained 34.0% of the time, and both kinds of Mixed pairs did so 26.7% of the time, $F_1(2, 27) = .66, p > .10; F_2(2, 28) = 1.36, p > .10$. The expressions used by a pair for any one chair were remarkably consistent across the last two trials. This is particularly striking when we consider that the references to a given chair were separated by an average of 14 references to other chairs. These results suggest that lexical entrain-

TABLE 1

Frequencies of Types of Convergence (With Cumulative Percentages in Parentheses)
Between Trials 5 and 6 for Directors' Terms, Experiment 1

	Convergence category	Type of Pairs			
		Same (Natives)	Mixed (N/Non-N)	Mixed (Non-N/N)	Total
1	Verbatim	43 (29%)	17 (11%)	18 (12%)	78 (17%)
2	Same content words	8 (34%)	23 (27%)	22 (27%)	53 (29%)
3	Slightly shorter	43 (63%)	53 (62%)	39 (53%)	135 (59%)
4	One content word different	21 (77%)	17 (73%)	17 (64%)	55 (71%)
5	Some similarity	16 (87%)	26 (91%)	37 (89%)	79 (89%)
6	Entirely different	19 (100%)	14 (100%)	17 (100%)	50 (100%)
Total		150 (100%)	150 (100%)	150 (100%)	450 (100%)

Note: In N/Non-N Mixed pairs, the native speaker was the first director; in Non-N/N Mixed pairs, the non-native speaker was the first director. First directors generally had the first opportunity to propose referring expressions.

ment is characteristic of communication, regardless of speakers' relative competence in a language. Appendix A excerpts the discussion of a particular chair over six trials by a pair of native speakers, and Appendix B excerpts the discussion of that chair by a Mixed pair, with the non-native speaker as first director. In Appendix C, another Mixed pair with the native speaker as first director discuss a different chair.

Accuracy. Accuracy in the matching task was high; while matching 15 chairs six times, Same pairs made, on average, a total of .2 errors, pairs with non-native first directors made .4 errors, and pairs with non-native first matchers made somewhat but not significantly more, 1.9 errors. Nearly all errors in Mixed pairs were made when non-natives acted in the matcher role. Errors decreased over trials, linear trend, $F_1(1, 27) = 6.26, p < .02$,[3] and no pairs made any errors at all in the last two trials. This level of performance establishes that the expressions that the native speakers used were comprehensible to the non-native speakers.

Effort. We estimated effort by the number of words used to match the chairs. Figure 1 depicts mean number of words per item uttered by each kind of pair for each chair across the six trials. Pairs in all three conditions became more efficient with time, linear trend, $F_1(1, 27) = 79.99, p < .001; F_2(1, 14) = 172.67, p < .001$. Different kinds of pairs expended different amounts of effort to reach similar levels of performance, $F_1(2, 27) = 11.58, p < .001; F_2 (2, 28) = 49.47, p < .001$. This was
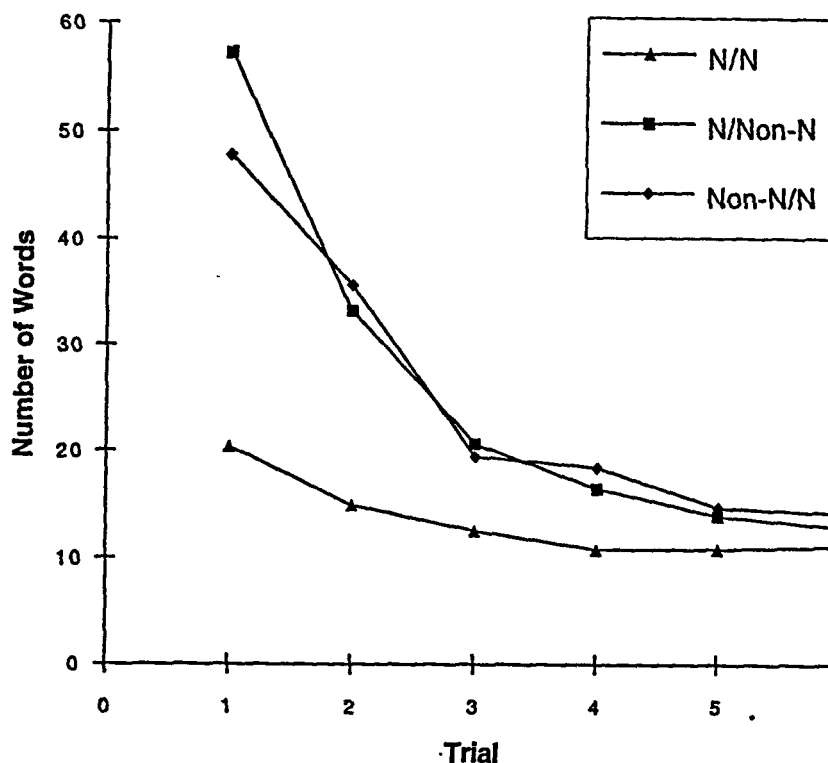
Figure 1. Mean words per item used by different kinds of pairs in each trial.

because the referential communication task was much harder for Mixed pairs than for Same pairs. Mixed pairs used on average nearly twice as many words as Same pairs to complete the six matching trials, 2289 to 1211, planned comparison, $F_1(1, 27) = 23.11, p < .001; F_2(1, 14) = 105.34, p < .001$. Over the six trials, Mixed pairs improved in their efficiency more than did Same pairs (planned comparison of the interaction with linear trend, $F_1(1,135) = 50.35, p < .001; F_2(1, 140) = 133.55, p < .001$). To complete the six trials, Mixed pairs with native first directors used marginally more words than those with non-native first directors, 2319 to 2259; this difference was reliable by subjects but not by items (planned comparison, $F_1(1, 27) = 6.81, p = .01; F_2(1, 14) = 2.34, .10 < p < .15$. This difference was due overwhelmingly to Trial 1, when Mixed pairs with native first directors used more words than Mixed pairs with non-native first directors, 858 to 718.

Typically, directors in matching tasks produce more words than matchers, because directors know the target locations of the cards and matchers do not. We

TABLE 2
Mean Words Per Chair by Directors and Matchers in Trial 1

Types of pairs	Director	Matcher
1. Same (native–native)	17.46	3.11
2. Mixed (native director, non-native matcher)	43.55	13.41
3. Mixed (non-native director, native matcher)	32.53	15.47

broke down the word counts in the first trial by director and matcher role; overall, directors produced 75% of the words to matchers' 25%, $F_1(1, 27) = 108.18$, $p < .001$; $F_2(1, 14) = 132.68$, $p < .001$. Referring to chairs was much harder for non-native speakers than for native speakers. The Least Collaborative Effort hypothesis predicts that if partners optimize effort collectively by taking each other's costs into account, then native speakers should utter relatively more words as directors or matchers than non-natives in the very same roles. There was a Role × Condition interaction, $F_1(2, 27) = 6.10$, $p < .01$; $F_2(2, 28) = 23.91$, $p < .001$. As predicted, when natives in Mixed pairs served as directors in Trial 1, they uttered 76% of the words, whereas when non-natives served as directors, they uttered 70% (planned comparison, $F_1(1, 27) = 7.32$, $p = .01$; $F_2(1, 14) = 23.98$, $p < .001$). So pairs distributed their collective effort according to their relative ability. Table 2 shows mean words per chair for directors and matchers in Trial 1.

Acquisition of Idiomatic Terms by Non-Natives. Non-native speakers learned a modest quantity of idiomatic terms for chairs during the card-matching conversations. Twenty-one percent of non-natives' expressions on the post-tests were very idiomatic, compared to only 9% on the pre-tests. Another 28% of non-natives' post-test expressions were somewhat idiomatic, compared with another 13% on the pretests. Simply comparing whether expressions were idiomatic doesn't take into account the possibility that even when both pre- and post-test expressions for a chair were idiomatic, they weren't necessarily the same expression; to more precisely determine non-natives' prior knowledge, we looked at the content of individual pairs of pre- and post-test expressions. When a pre-test expression a particular speaker produced for a particular chair contained the idiomatic expression from the post-test, this established conclusively that the speaker knew the idiomatic expression before conversing with the native speaker. With these cases subtracted, 16% of the post-test expressions were very idiomatic and 24% were somewhat idiomatic.

Recall that we determined "idiomaticity" based on the set of 20 expressions produced by native speakers in the Same pairs for each chair. There is, of course, no guarantee that these 20 expressions represented a complete set of idiomatic

expressions. A better way to rate whether terms improved in their idiomaticity would be to have native speakers compare the pre- and post-test expressions for each pair. This was the motivation for Experiment 2.

Entrainment and Acquisition. We found no relationship between entrainment and idiomaticity of post-test expressions; non-natives were no more likely to acquire idiomatic terms when they and their partners had converged on expressions, than when they had not. In fact, many of the entrained-on expressions produced by Mixed pairs were strikingly idiosyncratic, such as *the chair in which I can shake my body* (for the rocking chair) and *the baby board chair* (for the high chair). Examples like these suggest that native speakers do not necessarily provide a stable, idiomatic target for non-natives, but sometimes take up terms proposed by their non-native partners, perhaps to minimize the effort that they need to expend together to do the task.

EXPERIMENT 2: ACQUISITION OF IDIOMATIC TERMS BY NON-NATIVE SPEAKERS

In Experiment 2, we tested the prediction that non-native speakers can learn idiomatic terms in conversation with native speakers by verifying that the terms the non-native speakers knew after the matching task were more idiomatic than the terms they knew before the matching task in Experiment 1. A new group of native speakers compared the *before* and *after* expressions from the pre- and post-tests for naturalness.

Method

Participants. Thirty-one undergraduate psychology students at the State University of New York at Stony Brook participated as judges, to fulfill a research requirement for a psychology course. There were 17 women and 14 men, and all identified themselves as native speakers of English.

Materials. A questionnaire was assembled from the expressions generated in the pre- and post-tests from Experiment 1. Three of the 15 chairs (rocking chair, chaise lounge, bean bag) were chosen at random. For each of these three chairs, 30 pairs of *before-and-after* referring expressions from the pre- and post-tests were chosen as follows: For each chair, 20 before-and-after expressions came from the 20 non-native speakers and 10 came from native speakers who participated in the Same condition (one native was chosen at random from each Same pair). Members of each pair of before-and-after expressions came from the same speaker. The questionnaire asked, for each pair of expressions, (a) *Which of these descriptions sounds more natural?* and (b) *How natural does the description you chose sound?* The second question had a 7-point answer scale ranging from 1 (not very natural)

to 7 (very natural). Of the 90 pairs of expressions, 12 before expressions were exactly the same as the corresponding after expressions, so these were omitted from the questionnaire. The remaining 78 pairs of expressions were presented in three blocks of 25, 28, and 25 in which the first block of expressions named the rocking chair, the second named the chaise lounge, and the last named the bean bag. Within each block, pairs of expressions were presented in a random order, and within each pair of expressions, the before and the after expressions were presented in a random order.

Procedure. Each judge completed the questionnaire individually. Judges were told to compare the expressions in each pair, choose the more natural one, and then rate it for naturalness. As they completed the questionnaire, they viewed the pictures of the three chairs that had inspired the referring expressions in Experiment 1.

Results and Discussion

Before and After Choices. The expressions non-native speakers produced after conversing with native speakers were chosen by the judges as more natural than those produced before, 60.1% of the time—greater than chance at $t_1(30) = 6.44, p < .001; t_2(56) = 3.21, p < .003$. We take this as evidence that the non-native speakers learned some idiomatic phrases from the native speakers during their conversations. As we expected, the naturalness of native speakers' expressions was not affected by their conversations with non-natives; their after expressions were chosen over their before expressions 53.1% of the time—no different from chance at $t_1(30) = 1.57, p > .10; t_2(20) = .52, p > .10$.

Naturalness Ratings. Although non-native speakers learned some idiomatic phrases during the conversational task, the expressions they produced were still rated as less natural than those from native speakers, 4.09 to 5.34, $t_1(30) = 6.50, p < .001; t_2(76) = 7.76, p < .001$.

Together with the results of Experiment 1, these results confirm that non-native speakers acquired a modest amount of idiomatic vocabulary in the conversational matching task.

EXPERIMENT 3: ADJUSTMENTS OF NATIVE SPEAKERS TO NON-NATIVES

Even though the native speakers were the experts and non-native speakers were the novices in the English-speaking task in Experiment 1, native speakers' idiomatic referring expressions were not always taken up by non-natives. The grounding process sometimes resulted in native speakers abandoning idiomatic labels to adopt non-idiomatic alternatives proposed by non-natives. For example, the chair that most natives preferred to call *the office chair with wheels* (as in Appendix A), one

native ended up calling *the one with five little tires* (as in Appendix B). When non-natives served as first directors, they often proposed lengthy functional or visual descriptions that native matchers sometimes accepted in lieu of shorter, more idiomatic phrases or labels. When natives served as first directors in Mixed pairs, they often proposed multiple expressions that included both lexicalized, idiomatic terms as well as descriptive phrases; then their non-native partners selected from these proposals or fashioned a counter-proposal from them (as in Appendix C).

Experiment 3 examined the extent to which native speakers sacrificed idiomaticity in adjusting to non-native speakers. A new group of native speakers rated the naturalness of referring expressions from the conversations in Experiment 1. Because the Ideal Input hypothesis assumes that native speakers provide a stable target that non-native L2 learners move toward, it predicts that the naturalness of referring expressions should depend on the speaker's competence and not on the addressee's. Because the Least Collaborative Effort hypothesis predicts that adjustments happen in both directions, it predicts that native speakers addressing non-natives should produce less idiomatic and more idiosyncratic expressions than when they address other natives.

Method

Participants.   Twenty undergraduate psychology students (13 women and 7 men) at the State University of New York at Stony Brook participated as judges, to fulfill a research requirement for a psychology course. The students were native speakers of English and none had participated in Experiments 1 or 2.

Materials.   For the same three chairs used in Experiment 2 (rocking chair, bean bag, chaise lounge), a referring expression spoken by each speaker in Experiment 1 (from the last two trials, 5 and 6) was extracted from the conversational transcripts to construct questionnaire items. Each speaker in Experiment 1 contributed one expression; there were 60 from non-native speakers, 60 from natives whose partners had been non-natives, and 60 from natives whose partners had been natives. Expressions that were used verbatim by more than one speaker in Experiment 1 appeared in the questionnaire only once, to prevent them from seeming more natural by virtue of repetition in the questionnaire. This resulted in 28 expressions for the rocking chair, 37 for the bean bag chair, and 58 for the chaise lounge, for a total of 123 expressions.

Procedure.   The questionnaire was presented on a Macintosh computer, using the SuperLab™ program. Each person completed the questionnaire individually. Referring expressions were presented on the screen one at a time. The expressions were blocked for the three chairs: Block 1 was the rocking chair; Block 2 was the bean bag chair, and Block 3 was the chaise lounge. For each block, the original chair picture was posted next to the computer screen; when a block ended, participants were instructed to flip down the next picture in preparation for the next

block of expressions. Within each block, expressions were presented in a different random order to each participant. For each expression, participants were asked to rate how natural the expression was on a scale of 1 to 7, where 1 was *not very natural* and 7 was *very natural*. They used the keyboard to type in a number, and both ratings and reaction times were recorded.

Analysis. For the analysis, it was necessary to weight the ratings and reaction time observations for expressions produced by more than one speaker to reflect the numbers and kinds of speakers who generated the expressions. For instance, the expression "rocking chair" was produced not only by non-native speakers, but also by native speakers in both Same and Mixed pairs. Each participant in Experiment 3 rated this expression only once, but the rating was weighted to contribute to the means for all three kinds of speakers, according to how many speakers of a given type produced the expression. For this reason, the degrees of freedom reflect the total number of expressions from Experiment 1 (180) rather than just the number of expressions in the questionnaire (123). For the reaction time analysis, reaction times greater than 10 s. (approximately 2 SDs from the mean) were discarded.

Results and Discussion

Referring expressions received different ratings, depending on the language skills of speaker and addressee $F_1(2, 38) = 208.25, p < .001; F_2(2, 177) = 42.68, p < .001$. On the 7 point rating scale, native speakers in conversation with other native speakers were found to have produced the most natural expressions (with a mean rating of 5.74), followed by native speakers in conversation with non-native speakers (4.65), followed by non-native speakers (3.58). For native speakers, whether the addressee was a non-native or another native made a difference planned comparison, $F_1(1, 38) = 54.05, p < .001; F_2(1, 177) = 5.25, p < .02$, and for Mixed pairs, the referring expressions produced by natives were still more natural than those produced by non-natives, planned comparison, $F_1(1, 38) = 52.04, p < .001; F_2(1, 177) = 5.07, p < .05$.

The time to judge the naturalness of the referring expressions differed as well by who had produced them, $F_1(2, 38) = 57.78, p < .001; F_2(2, 177) = 15.03, p < .001$. Expressions produced by native speakers were faster to judge when they had been addressed to other natives than to non-natives (2855 to 3672 ms), planned comparison, $F_1(1,38) = 51.16, p < .001; F_2(1,177) = 6.13, p < .02$. In the Mixed pairs, expressions from native speakers in conversation with non-native speakers took just as long to judge as did expressions by non-native speakers (3672 to 3518 ms), planned comparison, $F_1(1,38) = 1.82, p > .10; F_2(1,177) = .22, p > .10$.

In sum, evidence from the naturalness ratings and judgment times converged to demonstrate that the idiomaticity of a referring expression depends on both speaker and addressee. Although native speakers' expressions were rated as more natural than non-natives', native speakers still adjusted their referring expressions signifi-

TABLE 3
Referring Expressions from the Sixth Trial
for Each Pair

Native Directors from Same Pairs
  the rocking chair
  the rocking chair
  the rocking chair
  the rocking chair
  the rocking chair
  the rocking chair
  the rocking chair
  the rocking chair
  a rocking chair
  a wooden rocking chair

Native Directors from Mixed Pairs
  the rocking chair
  the rocking chair
  the rocking chair
  the rocking chair
  a rocking chair
  the rocking chair with arms
  all wooden brown rocking chair
  the one that moves
  you can shake your body
  the chair that goes back and forth

Non-native Directors from Mixed Pairs
  rocking chair
  rocking chair
  the rocking chair
  is rocking
  rock chair
  grandfather chair
  uncomfortable chair
  six bars in the back
  you can swing there
  I can back and forth

cantly to their non-native addressees, producing expressions that were less idiomatic and harder to judge than when they addressed other native speakers. Table 3 shows the partner-specific referring expressions for a particular chair, produced by directors in the last trial of the card-matching task. The adjustments native speakers from Mixed pairs made in their referring expressions presumably produced more comprehensible expressions for the non-native addressees, evidenced by the fact that their matching performance improved across trials and was at ceiling

for the last two trials (see Experiment 1). It appears that non-idiomatic adjustments (such as those in Table 3, native directors from Mixed pairs) were specific to individual non-native partners, and emerged out of an interactive process for establishing referring expressions acceptable to both. These adjustments are *not* the kinds of generic ones mentioned by Hatch (1983) and Long (1983, 1985), and would probably not be easier for other non-natives not involved in the conversation (such as overhearers) to understand (see Schober & Clark, 1989). That native speakers sometimes traded off idiomaticity for comprehensibility contradicts the Ideal Input hypothesis and supports the Least Collaborative Effort hypothesis.

GENERAL DISCUSSION

The three experiments reported here present a consistent picture. First, referential communication between non-native and native speakers is much like that between native speakers, at least as far as the likelihood of lexical entrainment is concerned. In Experiment 1, partners in the card matching task converged on the same referring expression for a particular chair equally often, regardless of whether their language abilities matched. Second, these matching conversations appear to have led to some acquisition of idiomatic expressions: After discussing objects with native speakers, non-native speakers formed more natural sounding referring expressions than they had formed before. In Experiment 1, non-natives produced more idiomatic expressions (that matched those of native speakers in Same pairs) in the post-test than in the pre-test. In Experiment 2, raters chose non-natives' post-test expressions as more natural than their pre-test expressions at a rate greater than chance, 60.1% of the time.

One factor that may have limited acquisition somewhat is the non-natives' memory for the expressions used in the conversations. First of all, the matching task was very difficult for them; second, when they had to label 15 quite similar objects during the post-test without interactive support from their native partners, they may not always have been able to remember the terms that they had heard and understood during the conversations.

Another factor that may limit acquisition in the face of comprehensible input has been attributed to what Larsen-Freeman & Long (1991) have called "deviant input," or what Ferguson (1971, 1975) labeled "foreigner talk"[3] (Giles & Coupland, 1991; Hatch, 1983; Larsen-Freeman & Long, 1991). This explanation does not apply to our data, since none of our native speakers produced the kinds of ungrammatical utterances that characterize foreigner talk[5] (Ferguson, 1971, 1975; Hatch, Shapira & Gough, 1978; Meisel, 1977). Instead, our data support the idea that the collaborative nature of ordinary conversation may both facilitate and limit L2 acquisition (see also Ball, Giles & Hewstone, 1984; Giles & Byrne, 1982; Hatch,

1983; Pica, 1994), especially when communication (rather than vocabulary learn-ing) is the main goal.

In Experiment 3, referring expressions produced by native speakers from Same pairs were rated as most natural, followed by those produced by native speakers from Mixed pairs, followed by those produced by non-native speakers. It appears that in order to communicate, sometimes native speakers adapted by abandoning idiomatic terms in favor of the non-idiomatic, often idiosyncratic terms their non-native partners preferred. This refutes the assumption underlying the Ideal Input hypothesis that we sketched earlier, that native speech provides a stable target, at least so far as vocabulary is concerned. Response times for the ratings provided even more dramatic evidence: Expressions produced by native speakers in Same pairs were fastest to rate, whereas those produced by native speakers in Mixed pairs were no faster than those produced by non-native speakers.

Although native speakers did not always use idiomatic expressions, their non-native partners did acquire idiomatic terms. Native speakers often incorporated aspects of non-idiomatic expressions proposed by non-natives and restructured them to be grammatical (and indeed, these were judged as more natural than the non-natives' expressions in Experiment 3). Such interactive adjustments may provide useful, comprehensible input for non-natives. This is consistent with aspects of Krashen's Input hypothesis (Krashen, 1981, 1982, 1985) as well as with proposals about the role of "negotiation" in L2 acquisition (Hatch, 1978, 1983; Larsen-Freeman & Long, 1991; Long, 1981, 1983, 1985; Pica, 1994; Pica & Doughty, 1985; Tarone, 1980, 1981). We emphasize, however, that what some have highlighted as "interactional structure adjustments" (e.g., Larsen-Freeman & Long, 1991, p. 139) are not unique to native/non-native conversations, but are simply a part of the grounding process present in all kinds of conversations. These adjust-ments are not generic, but specific; they result from the responses of a particular individual to a particular partner in conversation.

The evidence from these experiments fits well within the collaborative view of conversation proposed by Clark and his colleagues (Brennan, 1990; Clark & Brennan, 1991; Clark & Schaefer, 1989; Clark & Wilkes-Gibbs, 1986; Isaacs & Clark, 1987; Schober & Clark, 1989). According to this view, people in conversa-tion distribute their effort collectively; that is, they minimize the amount of effort they expend together, rather than trying to minimize the effort they invest individu-ally in a single utterance. This means that when something is easy for a speaker but hard for a listener, the speaker will put in extra effort, and vice versa. In Experiment 1, Mixed pairs distributed their effort differently than Same pairs, according to the relative abilities and roles of the two partners. Mixed pairs worked much harder at first than Same pairs to reach similar levels of performance; however, both kinds of pairs became more efficient over time, approaching the same level of efficiency

by the end of the task. Native speakers uttered more words than non-natives acting in the same roles. They often eased the burden on non-native speakers by offering descriptions with multiple components for their non-native partners to choose from (Hatch, 1978, calls these "OR CHOICE questions," p. 419). These results, considered together with results from other referential communication studies, lead us to expect people in conversation to distribute their effort according to the Least Collaborative Effort hypothesis. They adjust to relevant differences in individual ability, whether they are native or non-native speakers, adults or children (Hatch, 1983), experts or novices (Isaacs & Clark, 1987), or people with high or low spatial ability (Schober, 1997).

The two hypotheses we have considered are each congruent with a different set of assumptions about the nature of communication. The Ideal Input hypothesis reflects the dominant view of communication as a process by which a speaker sends a message to a listener, checking whether or not the message was received based on the listener's feedback signals. According to this idea, meanings reside in the messages being sent from speaker to listener. The non-native's task is not only to decode these meanings, but also to learn the linguistic conventions under which messages are created.

The Least Collaborative Effort hypothesis, on the other hand, holds that meanings are jointly constructed at a particular moment, between particular participants who rely on their common ground. This joint construction of meaning in context often results in the production of idiosyncratic terms that are understood uniquely by the participants (Schober & Clark, 1989; Wilkes-Gibbs & Clark, 1992). For instance, in one study, speakers in different conversations referred to the same abstract geometric shape as "the rice bag," "the whale," "the complacent one," "the stretched-out stop sign," and "the baby in a straitjacket," whereas overhearers (but not addressees) found these expressions baffling (Schober & Clark, 1989). Further examples of meanings constructed in a social context are lexical innovations (E.V. Clark & Clark, 1979; Clark, 1983; Clark & Gerrig, 1983). In referential communication, lexical entrainment marks a *conceptual pact* or temporary agreement with a particular partner to view an object in a particular way (Brennan & Clark, 1996). In the situation we have examined, the social construction of meaning could both help and hinder the non-native: Communication is easier when the non-native's idiosyncratic referring expression is taken up by a native speaker, but acquisition may be harder if the non-native comes to believe that an idiosyncratic referring expression is idiomatic. On the other hand, the history of how a referring expression was established in a particular conversation may leave a non-native with a hypothesis about the extent to which the expression is innovative or conventional. Future work should address issues such as these.

We have focused on the acquisition of vocabulary in conversation. The acquisition of syntax could be quite different, since in our native/non-native conversations, the natives did seem to provide a stable syntactic target. Another issue we have not investigated is whether the effects of conversation on vocabulary acquisition fade, persist, or emerge more strongly over time. Understanding L2 acquisition in everyday conversational interaction between native and non-native speakers is particularly important in a country as linguistically diverse—yet ostensibly monolingual—as the United States.

APPENDIX A

Pair 7 (Two Native Speakers, N(13) and N(14)), Chair 6

Trial 1

N (13)	ok an office chair with wheels and it reclines back kinda
N (14)	ok
N (13)	like one they sell in Ikea
N (14)	yeah

Trial 2

| N (14) | the sixth one is the office chair with wheels |
| N (13) | ok |

Trial 3

| N (13) | fourth one's ah the office chair with wheels |
| N (14) | ok |

Trial 4

| N (14) | fourth one is the office chair the *one with* wheels |
| N (13) | *right* |

Trial 5

| N (13) | the fifth one's the office chair with the wheels |

N (14)   you mean the fourth one?
N (13)   fourth one yes
N (14)   ok

Trial 6

N (14)   the fourth one is the office chair
         with the wheels
N (13)   ok

APPENDIX B

Pair 4 (Mixed Pair with Non-Native Speaker as First Director), Chair 6

Trial 1

Non-N   ah I like this chair
        ah because ah I can
        I can lounge
        and ah I only use this chair
        in a:h office
        it looks like um it's attached
N   wh:what's it look like?
Non-N   looks like it's patched
        looks it's patched
N   I don't know what you're saying.
Non-N   the cushion it it's patched
        not chipped
N   ok ok
Non-N   yeah
        ha
        so (laughs)
N   what color is it?
Non-N   ah color is brown
        not redder
N   ok
Non-N   a made of wood
        and dis a:h
        I don't know to say that
N   does it have wheels on the bottom?
        or or not wheels?
Non-N   not wheels??

N   it doesn't have wheels on the bottom?
Non-N   a:h think it's bottom
         ah ah o:r there is bottom
         o:r there is fill — the bottom
N   there are wheels?
Non-N   yeah
N   u:m five of them?
Non-N   yeah
N   ok
         I think a:h I know which one you're talking about.
         um
Non-N   you got it number
N   *yeah:a*
Non-N   *ok*
N   see ah
         y:ou can move on
         1 think
         to number two

Trial 2

N   um ok
         um number one
Non-N   ok
N   has ah five wheels on the bottom
Non-N   five wheels yeah
N   and it's ah brown
         the arms are wooden
         um
         to me it looks like an office chair
Non-N   looks like office chair?
N   yeah
         um
Non-N   I ah can not shake my um
N   no
Non-N   my ok
N   no
Non-N   I got that one
N   it's ah it's got five wheels on the
         bottom of it
Non-N   um hum
N   ok ah

         do you have it?
Non-N   yeah

Trial 3

Non-N   and number five a:h
         there is a:ah five sm:all tire
. N   ok
Non-N   in bottom
N   ok I got it

Trial 4

N   number nine
         nine is the chair with five
         five little tires on the bottom
Non-N   ok I got it

Trial 5

Non-N   ah number five
         ah there is a little ah five tires
         ah on ah the bottom
N   ok

Trial 6

N   nine has five little tires
Non-N   ok

APPENDIX C

Pair 13 (Mixed Pair with Native Speaker as First Director), Chair 7

Trial 1

N   um number eight
         is um
         a lounge chair
         it's yellow with
         flowers on it
         it's it's
         like a bed
Non-N   yeah ok
N   ok?

Trial 2

Non-N	and number three
	is like a bed
N	ok got it

Trial 3

N	ok
	number five is that bed
	the lounge chair
Non-N	yes

Trial 4

Non-N	and yellow bed
N	uh huh

Trial 5

N	number six is the
	one like a bed
Non-N	yes

Trial 6

Non-N	number one like a bed
N	ok

NOTES

1. For simplicity's sake, we will refer to the generic speaker as female and the generic addressee as male.

2. Here we consider lexicalized phrases (e.g., *rocking chair*) to be idiomatic, based on the view that they are lexemic idioms and thus "subject to a possible lack of understanding despite familiarity with the meanings of the components, or to erroneous decoding: they can potentially mislead the uninformed listener, or they can disinform him [*sic*]," (Makkai, 1972, p. 122).

3. F2 is not reported here because errors were not coded by items.

4. Note that by foreigner talk, we mean any *ungrammatical* alterations that native speakers might make during conversation with non-native speakers, in the sense intended by Ferguson (1971, 1975). Others have used foreigner talk to mean all speech adjustments by natives to non-natives (Krashen, 1985, pp. 8–9). Foreigner talk is also distinct from interlanguage, the speech that non-native speakers hear from other non-natives.

5. Even when our native speakers in Mixed pairs used idiosyncratic expressions, they still spoke grammatically. The only instance in which ungrammatical speech was used was when the native speaker of one pair turned out to be a bilingual Korean/English speaker,

raised in New York but speaking only Korean at home, who recognized the non-native speaker as also being Korean. The data from this pair were discarded.

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