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Lexical failure and gesture in second language development

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Introduction

Second language acquisition can be defined as the acquisition of another language after the age of three or four (Klein, 1986). It involves the learning and mastery of the morphology, syntax, phonology, and lexicon of the new language. The process by which learners acquire a second language is complex, gradual, nonlinear, and dynamic (Larsen-Freeman, 1991). Depending on their stage of second language development, learners may have difficulty retrieving words, or they may not know words at all and exhibit lexical failure.

Butterworth and Hadar (1989, 1997) have proposed that iconic gestures arise when speakers have a lexical retrieval problem and that these gestures help facilitate word-finding. Beattie et al. (Beattie & Shovelton, 1999; Beattie & Coughlan, 1998, 1999) have experimentally tested this theory and shown that lexical retrieval problems alone cannot account for iconic gestures. Rather, they have shown that the gestures that accompany lexical retrieval difficulty are sometimes iconic and sometimes not. Their work supports McNeill's theory (1989, 1992) that speech and gesture form a single-integrated system and express two aspects of thought: the verbal and the imagistic and that gestures are manifestations of speakers' on-line thinking processes.

The studies on gesture and lexical retrieval to date have involved native speakers of a language. In this paper, I consider the issue of what happens when the speaker is a second language learner. I examine the types of gestures that occur with lexical retrieval and lexical failure in second language development and their function. I propose that different types of gestures occur depending on whether the speaker is trying to access a word or whether the speaker is trying to elicit a word from the listener.

Methods

Subjects were shown the cartoon *Canary Row* in two segments and asked to narrate each segment of the cartoon to a listener in both English and Spanish. The order was counterbalanced. Narrations were videotaped and subsequently coded using

McNeill's coding scheme (1992). Instances of lexical failure and retrieval in four motion events in English were noted and analyzed.

Subjects

There were ten subjects. All were Mexican-Spanish speaking learners of English as a second language at National-Louis University: five at the intermediate ESL proficiency level (from ESOL Levels 3 and 4) and five at the advanced ESL proficiency level (beyond ESOL Level 5, the last course in the ESOL program).

Results

Within the narrations, there were six instances of lexical retrieval problems and ten instances of lexical failure¹ for the intermediate ESL learners, and there were five instances of lexical retrieval problems and nine instances of lexical failure for the advanced ESL learners. All the gestures occurred within the subject's gesture space, and most of the gesture strokes co-occurred with speech or a combination of a pause² and speech (Table 1), for example, [*e<e>** // **the mouth**//].

ESL Proficiency Level	Lexical Search	Lexical Retrieval	Lexical Failure
Intermediate	56% speech 44% pauses	87.5 % speech 12.5 % pause + speech	41.7% speech 25% pause + speech 33.3% pauses
Advanced	37.5% speech 25% pause + speech 37.5 % pauses	62.5% speech 37.5 % pause + speech	65% speech 9% pause + speech 26% pauses

Table 1. - Timing of Gesture Stroke

Consistent with the results of Beattie et al. (1998, 1999), some of the gestures that co-occurred with lexical retrieval difficulty were iconic, and some were not (Table 2). The majority of the gestures with lexical search/retrieval for the intermediate ESL learners were iconics with some type of superimposed beats. In the case of one subject, there were two iconics with Butterworth beats³ as he searched for the word [*/// a<aa>** [*/*]]⁴ and an iconic with a Butterworth beat and a larger beat when he retrieved the word “post” [*// a post /*] followed by another iconic with a large superimposed beat for emphasis when he clarified that it was “a

¹ Lexical failure included use of Spanish words. There were two instances of Spanish word substitution for the intermediate ESL learners and eight for the advanced ESL learners. One subject repeatedly used the word *bolich* when describing the bowling ball.

² Pauses include filled and unfilled pauses and sounds such as tongue clicks.

³ Word search gestures named for Brian Butterworth

⁴ [] indicate the gesture phrase, bold the gesture stroke, and italics holds.

drain post” [a **drain post** /]. This was not true for the advanced ESL learners during lexical search/retrieval or for either group during lexical failure. There were few iconics with superimposed beats. This difference in gestures during search for the two groups may be due to the fact that the speech of the advanced ESL learners was more fluent. It contained more grammatically correct sentences and fewer long pauses. As a result, the advanced ESL learners’ lexical search did not take as long, and there was no danger of losing the floor. The iconics with superimposed beats seemed to perform two functions in lexical search for the intermediate ESL group: they retained the floor by serving as interruption suppression signals (Duncan, 1972), and the beat movement itself may have helped the subject in retrieving the word.

ESL Proficiency Level	Lexical Search	Lexical Retrieval	Lexical Failure
Intermediate	1 iconic 1 iconic (multiple stroke) 1 iconic w/Butterworth finger beat 2 iconic w/Butterworth beat 3 iconic w/superimposed beat 1 Butterworth finger beat N = 9	3 iconic 4 iconic w/superimposed beat 1 iconic w/Butterworth beat + beat N = 8	4 aborted iconic 1 aborted iconic + Butterworth finger beats 10 iconic 3 iconic (multiple stroke) 2 iconic w/superimposed beat 1 iconic + metapragmatic 1 iconic; result metaphor 2 metapragmatic N = 24
Advanced	5 iconics 2 Butterworth finger beats 1 paranarrative-metaphoric; iconic N = 8	7 iconic 1 deictic N = 8	4 aborted iconic 9 iconic 1 iconic + deictic 1 iconic w/superimposed beat 2 localizer 1 localizer + iconic 1 emblem 1 deictic w/superimposed beat 3 Butterworth beat N= 23

Table 2: Number and Type of Gestures

On the basis of how hands are symbolically used, Mueller (1998) classified iconic gestures into four types: hands portray, hands draw, hands mold, and hands imitate. The iconics that occurred with lexical search/ retrieval (Table 3) were primarily hands portray, draw or mold (*a drainpipe* or *bowling ball*). There were no instances of hands imitate.

The types of iconics that occurred with lexical failure were primarily hands imitate (*climbing, rolling, or throwing*), portray, and draw. These iconics functioned as a substitute for the lexical item. On occasion, the subjects also used their iconic gestures during failure to elicit words.⁵ Six of these co-occurred with hands imitate gestures and one with a hands draw gesture.

ESL Proficiency Level	Lexical Search	Lexical Retrieval	Lexical Failure
Intermediate	7 portray 1 draw	6 portray 1 L portray, R imitate	6 portray 5 draw 11 imitate
Advanced	3 portray 1 mold 2 draw	3 portray 2 mold 1 draw 1 L portray, R imitate	4 portray 2 draw 11 imitate 1 L portray, R imitate

Table 3- Type of Iconic

Conclusion

Second language speakers may have difficulty retrieving words, or they may not know words at all. The results of this study show that iconic gestures can occur with either lexical retrieval or lexical failure, but they are not the only types of gestures that occur. When iconic gestures do occur, different types are used depending on whether the speaker is trying to access the word or has given up and is trying to elicit the word or represent the word. The types of iconics used with retrieval represent primarily nouns (hands portray, mold, or draw). The types of iconics used with failure represent primarily activities (hands imitate). The question of lexical retrieval and lexical failure in second language development is an area that needs further exploration. This study is a first step into that arena.

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⁵ Several of these elicitations were followed by a subject/listener speech/gesture exchange.

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