



Deseret Language and Linguistic Society Symposium

Volume 7 | Issue 1

Article 14

3-27-1981

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Strong-Krause, Diane (1981) "The Acquisition of Grammatical Morphemes by Users of American Sign Language Learning English," *Deseret Language and Linguistic Society Symposium*: Vol. 7 : Iss. 1 , Article 14.

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THE ACQUISITION OF GRAMMATICAL MORPHEMES
BY USERS OF AMERICAN SIGN LANGUAGE LEARNING ENGLISH

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Interest in various aspects of American Sign Language has been growing rapidly during the last few years. My interest was kindled when a deaf student enrolled in my ESL grammar class several years ago at Brigham Young University. I was amazed that she encountered problems with the English language which were similar to ones the other students in the class found. Actually it had not occurred to me that English was not her native language. Now, nearly five years later, I have been able to take a closer look at this idea: that much of the deaf population are indeed faced with learning English as a Second Language.

American Sign Language

American Sign Language is the primary means of communication used by much of the deaf population in the United States and parts of Canada. It is commonly called ASL or Ameslan. With the exception of William Stokoe (1960), not much research had been carried out with ASL until the early 1970's. In fact, it has only been during the past decade that linguists have considered Ameslan an independent language and have begun to make detailed investigations into the properties of the language.

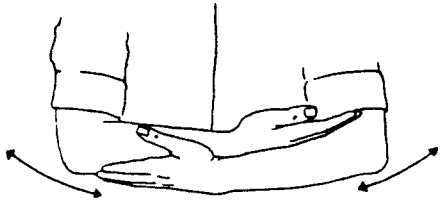
There still remain, however, many misconceptions about ASL. Quite often it is assumed that Ameslan is simply a visual representation of English. However, this is not the case. For example, this meaningful sequence in ASL:

FINISH TOUCH SAN FRANCISCO?

has the English equivalent of "Have you been to San Francisco?" While it is true that American Sign Language does differ from English, it must be mentioned that there are artificially created sign languages that use a combination of some ASL lexical items and English word order such as Signed English, Seeing Essential English, and Signing Exact English (Anthony, 1971; Gustason, Pftetzing, and Zawalkow, 1972).

Although ASL is not based on a spoken language, it is a false assumption that sign language users can communicate universally among themselves. Just as there are many different oral languages, there are many different sign languages which have developed and which are constantly changing. An American Sign user would have a difficult time communicating to someone from the deaf community of England, or China, or Japan. However, because of greater historical ties in the development of ASL, an Ameslan user could converse a bit easier with someone using French Sign Language (Markowicz, 1977).

An obvious characteristic of sign language is its iconicity or pantomimic quality. For example, these signs are very iconic:



* baby



eat

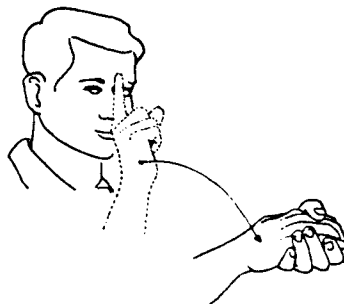


telephone

While it is true that many ASL signs are iconic in nature, abstract concepts as well as concrete ones can be expressed:



* love

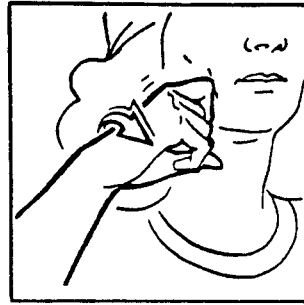
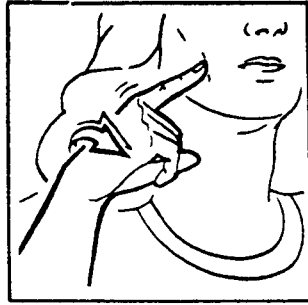


believe

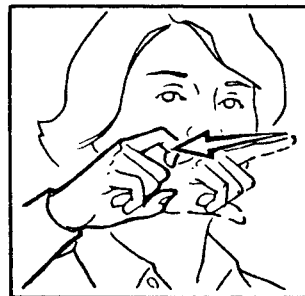
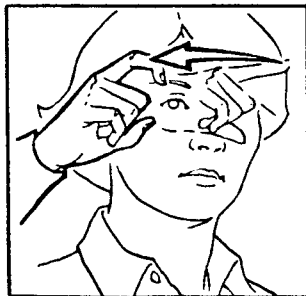
A love song, a drama, a poem, a technical paper, or a lecture can all be communicated effectively in ASL, including emotional or scientific content.

* Illustrations from O'Rourke, 1973.

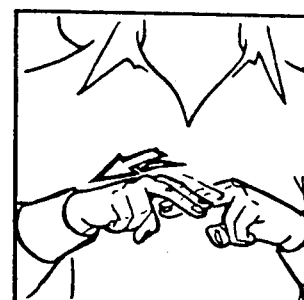
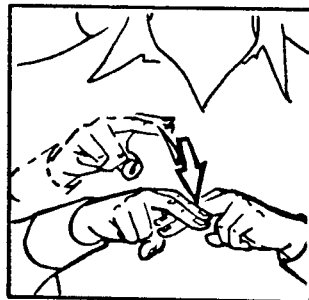
As mentioned earlier, American Sign Language was not considered an autonomous language until a few years ago (Belugi, and Klima, 1975; Siple, 1978). In 1960 however, Stokoe did start the movement with his studies which presented the idea that ASL signs could be described in terms of three components: location, handshape, and movement. These components were roughly analogous to phonemes of an oral language. The following are minimal pairs:



*candy apple
signs contrasting only in hand shape



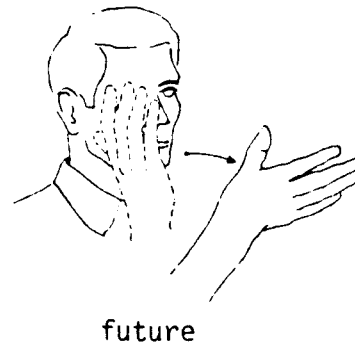
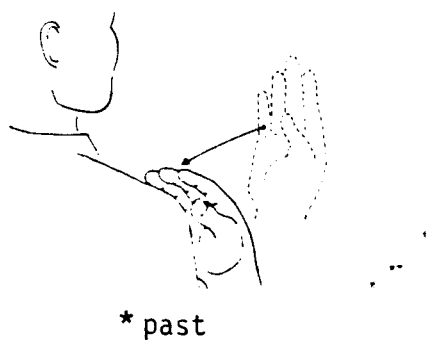
*summer ugly
signs contrasting only in location



*chair train
signs contrasting only in movement

*Illustrations from Klima and Belugi, 1979.

Along with this type of phonological description, research is now being conducted into the syntactic properties of ASL. Studies show that ASL has a basic subject-verb-object word order, but that word order is freer in ASL than in English, especially when the verb is intransitive or when the subject and object are not interchangeable (Fischer, 1974, 1975). The inflectional system of ASL is realized not in the combinations of separate morphemes as in oral languages, but rather in the modification of signs in terms of location, number, manner, size, and shape (Fischer, 1974). For example, to show plurality, a sign is repeated. Past is indicated with a motion towards the back of the person; future is indicated with a forward motion:



In addition, to these modifications, non-manual signals such as body movement and facial expressions may also help to clarify syntactical relationships and meaning (Fischer, 1974).

Current Research in Morpheme Acquisition

Now researchers are not only investigating the structure of ASL, but also the acquisition process. During the past decade, language researchers have been interested in the study of grammatical morphemes in language acquisition. It began with Brown's longitudinal study (1973) of three hearing children learning their first language. He described the rate of oral language acquisition in terms of the mean length of an utterance counted in morphemes. He found that despite the difference in age when language began, the rate of increase was very similar in each child. Other studies in ASL acquisition as a first language have been conducted. Of course, in order to keep the studies parallel to other first language acquisition studies, deaf children learning ASL from deaf parents had to be found. Studies show that hearing children begin to babble at about six months. Deaf children at this age "babble" also--with their hands. At age one, hearing children begin to produce one-word utterance--deaf children produce single signs. Between the ages of 18 and 24 months, hearing children produce two-word strings; deaf children during that same period produce two-sign strings (Siple, 1978).

*Illustrations by O'Rourke, 1973

Based on this evidence Bellugi conducted research similar to Brown's, involving a deaf child, Pola, acquiring ASL as a first language from deaf parents. Her results (Figure 1) show a similar rate of increase in language acquisition (Siple, 1973).

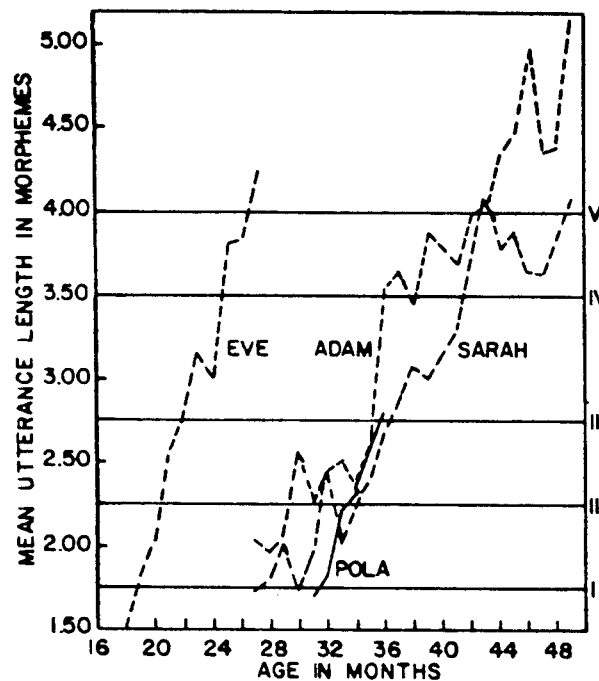


Figure 1. Mean length of utterance for Pola compared with that of three hearing children acquiring English from Brown's study (Siple, 1978).

Brown also found that with all the children, certain morphemes such as ing and plural seemed to be acquired earlier than others such as the possessive form "s". There seemed to be a similar acquisition order common to all the children. De Villiers and de Villiers (1973) confirmed Brown's findings with a cross-sectional study.

Then Dulay and Burt (1973, 1974, 1975) conducted parallel research in second language acquisition with children. They also found a "natural order" of acquisition, although the order was not identical to results found in first language research. The idea of a natural order was extended to adult second language learners in a study done by Bailey, Madden, and Krashen (1974) and again a natural order seemed to be present. Others have since conducted further investigations and have concluded that this order seems to appear when the focus is on communication rather than on form (Krashen, 1978).

The Study

Based on these research results, an hypothesis was formed: that if English is a second language for the deaf, an order of acquisition of grammatical morphemes similar to other orders for second language learners would be found.

The subjects in this study were 18 deaf students ranging in age from 13 to 22. They were asked to write as much as they could in five minutes about a picture. They could describe the picture or write a story about it. The object was to focus their attention on communication rather than on form.

Initially, nine morphemes were scored, but two of them (auxiliary and possessive) were eliminated because of infrequent use by the subjects and accurate conclusions could not be made. The morphemes scored are given in Table 1.

Table 1
The Seven Morphemes Scored

Cop (copula)	The woman <u>is</u> afraid.
Ing	The dog is <u>standing</u> .
PaI (irregular past)	He <u>heard</u> the dog.
PaR (regular past)	She <u>yelled</u> help.
3rd (person sing.)	He <u>lives</u> in the house.
Plu (plural)	The <u>kids</u> played.
Art (article)	<u>The</u> kids played.

As in other studies (Dulay and Burt, 1974; Bailey, Madden, and Krashen, 1974) usage was determined by the ratio of correctly formed and used functors to the obligatory occasions. A correctly used functor was given 1 point; a misformed functor was given .5 point; and a missing functor was given 0 points. For example:

They cats.	No functor--0 points
They is cats.	Misformed functor--.5 point
They are cats.	Correct functor--1 point

Results

Table 2 shows the results of this study as compared with Brown's, and de Villiers and de Villiers' first language studies and other second language studies.

Table 2

<u>Strong-Krause ASL</u>	<u>Brown '73 1st language</u>	<u>de Villiers ' 73 1st language</u>	<u>Dulay and Burt '73</u>
1. Cop	1. Ing	1. Plu	1. Plu
2. Plu	2. Plu	2. Ing	2. Ing
3.5. Ing	3. PaI	3. PaI	3. Cop
3.5. PaI	4. Art	4. PaR	4. Art
5. PaR	5. PaR	5. Art	5. PaI
6. Art	6. 3rd	6. Cop	6. 3rd
7. 3rd	7. Cop	7. 3rd	

<u>^aBMK '74</u>	<u>^bKrashen '77a</u>	<u>^cKrashen '77b Writing</u>
1. Ing	2. Ing	1. Ing
2. Cop	2. Plu	2. Cop
3. Plu	2. Cop	3. PaI
4. Art	4. Art	4. Plu
5. PaI	5. PaI	5. Art
6. 3rd	6.5. PaR	6. 3rd
	6.5. 3rd	

a Bailey, Madden, and Krashen, 1974

b Krashen, 1977a

c Krashen, 1977b

Table 3
SPEARMAN RANK CORRELATIONS

First Language			Second Language		
<u>Brown</u>	<u>de Villiers</u>	<u>Dulay/Burt</u>	<u>BMK '74</u>	<u>Krashen '77</u>	<u>Krashen Writing</u>
-.01 NS	.365 NS	.70 NS	.671 NS	.786 p<.025	.671 NS

As clearly indicated by the correlation results (table 3), this study with ASL students learning English did not correlate well with the first language studies. In fact, there was -.01 correlation with Brown's results. ASL students tended to correlate much higher with second language studies. Although only one study (Krashen, 1977) correlated significantly (p .025, one-tailed test), the others (Dulay and Burt, BMK, Krashen, 1977) barely missed the significant level.

The results of this study do tend to confirm the idea that ASL users do indeed learn English as a second language. It seems that this would indicate that more attention needs to be given to the language of the

deaf, *Ameslan*. Because of the unique mode of communication, great insights into both first and second language acquisition as well as language itself and its possible universals can be gained. Certainly those involved in research into language and language learning, can no longer ignore the study of American Sign language and those who use it.

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