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VARIATION IN AMERICAN SIGN LANGUAGE SYNTAX: AGENT-BENEFICIARY DIRECTIONALITY

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1. Introduction. Recent studies of sign language in the United States (Stokoe 1970, 1972; Moores 1972, Woodward 1972, 1973a; Friedman 1973) posit a diglossic continuum between American Sign Language (ASL) and Standard English in the deaf community (as described by Meadow 1972, and Schlesinger and Meadow 1973). This is not the classic diglossic situation described by Ferguson (1959), since the H variety (Standard English) and the L variety (ASL) are two separate languages, but it is a situation that shares much of the attitudinal and social characteristics of typical diglossic situations.

Until this year, however, there had been no attempt to describe this diglossic continuum utilizing variation theory. This paper reports on three recent studies of variation in ASL syntax that utilize variation theory. These studies offer a crucial testing ground for the descriptive and explanatory power of variation theory, since these studies are on visual phenomena that linguists have not normally observed.

The first study, the D. C. study (Woodward 1973a), analyzed data on three ASL rules from 141 informants from the Washington, D. C., Frederick, Maryland, and New York City areas who varied according to four social variables. These variables identified the informants as deaf or hearing, as having deaf or hearing parents, as having learned signs before or after the age of six, and having attended some college or not. The second study, the Montana-Washington study (Woodward 1973b), tested the same three variables using thirty-six informants from Montana and Washington state who were

chosen on the basis of the same three social variables as in the D. C. study. The third study, the interrule implication study (Woodward 1973c), took the data from the D. C. study and attempted to show implications between these three ASL rules.

It is impossible to discuss all aspects of each study. Only implications related to one of the rules, Outward-Inward Agent-Beneficiary Directionality, will be discussed in this paper. This rule, although it has the weakest implication of the three rules tested, is in some ways the most interesting.

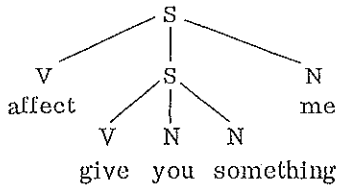
2. Outward-Inward Agent-Beneficiary directionality

American Sign Language has a number of verbs that express the relationship between agent (actor) and beneficiary (dative) by direction of movement in three-dimensional space. The verb sign begins at the agent (or at a point in his direction) and moves to the beneficiary (or a point in his direction). Although directionality may be used for all three persons, only second-person-as-agent directionality is considered in this study. The following example shows the derivational history of a typical example of second-person-as-agent directionality.

(1) you give me (you and me may be deleted)
'you give me'

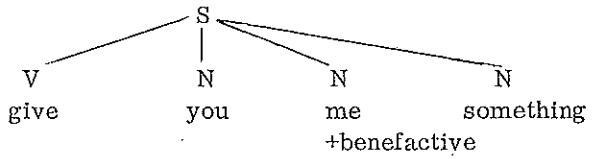
Example 1 can be seen as coming from the underlying structure represented in (1a).

(1a)



Affect is deleted and me is marked with +benefactive and sister adjoined to the other two noun phrases yielding (1b).

(1b)



From (1b) we can assign rules that will give the correct order of elements, assign the proper direction to the verb (from agent to beneficiary), and delete all N elements that are +understood (from previous statements).

3. The D. C. study

There is, however, variation in signs as to which verbs can take second person directionality. This study utilized intuitions of informants to test nine verbs that were empirically observed to take this directionality occasionally. These nine verbs were found to be implicationally ordered as follows: 'fingerspell', 'hate', 'hit', 'force', 'say no', 'ask (question)', 'tell', 'show', and 'give'. This implication produced the ten possible lects listed in Table 1. For 141 persons at nine slots a person, there was a total of 1, 269 slots. There were 130 exceptions in the responses, yielding a 10. 2 percent rate of exception or an 89. 8 percent rate of acceptability, a valid implication. (The other two implications, Negative Incorporation and Verb Reduplication showed 97 percent and 90. 6 percent rates of acceptability, respectively.)

TABLE 1. Implicational lects for Agent-Beneficiary directionality

	Lects									
	1	2	3	4	5	6	7	8	9	10
'fingerspell'	+	–	–	–	–	–	–	–	–	–
'hate'	+	+	–	–	–	–	–	–	–	–
'hit'	+	+	+	–	–	–	–	–	–	–
'force'	+	+	+	+	–	–	–	–	–	–
'say no'	+	+	+	+	+	–	–	–	–	–
'ask'	+	+	+	+	+	+	–	–	–	–
'tell'	+	+	+	+	+	+	+	–	–	–
'show'	+	+	+	+	+	+	+	+	–	–
'give'	+	+	+	+	+	+	+	+	+	–

3.1 Correlation of Outward-Inward Agent-Beneficiary Directionality with social variation.

Most sociolinguists have attempted to correlate social class with linguistic variation. They have generally assumed that social class may be described by an inter-correlation of education, occupation, and income. Other factors such as age and sex have been shown to be correlated with linguistic variation (Wolfram 1969, Trudgill 1972).

For the study of the deaf, four social variables seemed likely to correlate well with variation in sign language. These variables were: ± deaf, ± deaf parents, ± before six, and ± college.

Basically there are two reasons for choosing these four variables over others. (1) It did not seem justifiable to assume that social class was determined in the same way for both the hearing and the deaf communities. (2) It seems that the first three of these social variables are extremely important criteria for socialization into the deaf community. If a person is deaf, he can much more easily join the deaf community. Very few hearing people can really be considered part of the deaf community. Meadow (1972) pointed out that socialization into the deaf community invariably includes language socialization. With the children of deaf parents this language socialization generally takes place from birth. With children of hearing parents it may take place at other times. However, the age of six seems to be a crucial time in first language acquisition. Quite possibly a person learning signs after the age of six will sign differently from a person who learned signs earlier.

The fourth variable, education, seems to be a universal social variable for those societies having a formal education system, since education tends to preserve and transmit traditional values toward language and society as well as to promote a maintenance of language forms and structures that may not be present in everyday conversation.

As far as variation in Outward-Inward Agent-Beneficiary Directionality is concerned, lects 1 through 5 in Table 1 are the lects that are closest to pure ASL on the deaf diglossic continuum, since they are the lects that accept this ASL rule in the most environments. Conversely, lects 6 through 10 in Table 1 are the lects that are the furthest from ASL on the continuum, since they are the lects that accept this ASL rule in the fewest environments. Thus, it is possible to test dependency relationships between each of the four social variables and membership in lects 1 through 5 (ASL-like lects) and lects 6 through 10 (Non-ASL-like lects) by setting up two by two charts and running Chi-square tests on the data. Tables 2 through 5 show the relationship between lectal membership and each of the social variables.

TABLE 2. Lectal membership vs. deafness

Lects	+Deaf	-Deaf
1- 5	77 (71%)	8 (24%)
6-10	31 (29%)	25 (76%)
$\chi^2 = 21.45,\ p < .005$		

A Chi-square test of this data shows a very strong dependency relationship (at the .005 level) of ±deaf and membership in the lects. One is more likely to find a deaf person in lects 1 through 5 (closer to ASL) and more likely to find a hearing person in lects 6 through 10 (further from ASL).

TABLE 3. Lectal membership vs. parentage

Lects	+Deaf Parents	-Deaf Parents
1- 5	25 (69%)	60 (57%)
6-10	11 (31%)	45 (43%)
$\chi^2 = 1.22,\ p > .25$		

A Chi-square test of this data shows no dependency relationship of ±deaf parents and membership in these lects.

TABLE 4. Lectal membership and age of sign acquisition

Lects	+Before 6	-Before 6
1- 5	50 (77%)	35 (46%)
6-10	15 (23%)	41 (54%)
$\chi^2 = 12.69,\ p < .005$		

A Chi-square test of the data shows a strong relationship of the variable ±before six and membership in these lects. One is more likely to find a person who learned signs before six in lects 1 through 5 (closer to ASL) and more likely to find a person who learned signs after six in lects 6 through 10 (further from ASL).

TABLE 5. Lectal membership vs. education

Lects	+College	-College
1- 5	37 (84%)	32 (50%)
6-10	7(16%)	32 (50%)
(Hearing informants are not included in this chart.)		
$\chi^2 = 11.7,\ p < .005$		

A Chi-square test of this data shows a very strong dependency relationship (at the .005 level) of ±college and membership in these lects. One is more likely to find a deaf person who has attended some college in lects 1 through 5 (closer to ASL) and more likely to find a deaf person who has not attended any college in lects 6 through 10 (further from ASL).

Tables 2 through 5 have demonstrated that there are very strong dependency relationships between the variables ±deaf, ±before six,

and ±college and membership in Outward-Inward Agent-Beneficiary lects. As intuitively expected, deaf persons who learned signs before the age of six are more likely to be in lects that approach ASL more closely. However, there is no dependency relationship between ±deaf parents and membership in these lects.

3.2 Features conditioning the variation. In the first attempt at describing what factors were conditioning the Outward-Inward Agent-Beneficiary Directionality implication, I proposed a series of semantic and cherological features. However, based on Ralph Fasold's comments and suggestions on the D. C. study, I would like to propose the arrangement of a continuum of semantic features to explain the variation. Ignoring the sign 'fingerspell' for a moment, we can see a gradual change from something that might be called extremely beneficial to something that might be called extremely harmful. From left to right on the implication there is: 'give', 'show', 'tell', 'ask (a question)', 'say no', 'force', 'hit', 'hate'. 'Fingerspell' can now be seen as being outside this system--an extremely new entry that has not had time to find its way to its proper place in the already existing system. This is supported by the facts Outward-Inward Agent-Beneficiary Directionality for 'fingerspell' was earlier considered to be a child language overgeneralization from (Bellugi 1973) and that only 10 out of 141 informants (7 percent) in this study and 4 out of 36 informants (11 percent) in the Montana-Washington study used this form. In the future, it seems likely that 'fingerspell' will fit in somewhere around 'tell'.

The solution presented here to describe the implicational variation can be fairly easily tested out with certain other verbs that may take Outward-Inward Agent-Beneficiary Directionality. 'Bawl out' is an example of such a crucial test case. If 'bawl out' has entered the system, then it should be towards the harmful end of the continuum. If it is not, then it could be a lexical exception or else it could help prove the beneficial-to-harmful feature continuum presented here is not adequate to explain the implicational variation. A number of other verbs like 'bawl out' need to be tested before any final conclusion can be made.

4. The Montana-Washington study

The Montana-Washington study was a follow-up study to the D. C. study to test if the implicational patterns found in D. C. would be the same as those found in other parts of the country. They were the same and with generally higher rates of scalability. Outward-Inward Agent-Beneficiary Directionality was 92.6 percent scalable according to the implicational pattern in Table 1. (The other two

implications Negative Incorporation and Verb Reduplication, showed a 95 percent and a 97 percent rate of scalability, respectively.)

There were not enough informants in each cell to reliably test for correlation of membership in the lects and social variables.

5. The interrule implication study

The D. C. study revealed six lects for Negative Incorporation, ten lects for Agent-Beneficiary Directionality, and ten lects for Verb Reduplication. It was pointed out that the implicational scales could be divided and that Negative Incorporation lects 1 through 3, Outward-Inward Agent-Beneficiary lects 1 through 5, and Verb Reduplication lects 1 through 5 were the part of the continuum that approached ASL most closely, that is, were the lects that used these three rules in the largest number of environments. These three rules then may be treated as parts of another implicational ordering. Table 6 shows the four lects so determined with '+', indicating membership in the ASL-like lects and '-', indicating membership in the more English-like lects.

TABLE 6. Rule-to-rule implication

Lects	Agent-Beneficiary lects 1-5	Neg-Incorporation lects 1-3	Verb Reduplication lects 1-5
1	+	+	+
2	-	+	+
3	-	-	+
4	-	-	-

There were twenty exceptions to this implication out of 423 responses. This gives a 95.3 percent rate of scalability. By dividing this implication in half, lects 1 and 2 represent the end of the continuum in which most ASL rules are used in the most environments, and lects 3 and 4 represent the end of the continuum in which few ASL rules are used in few environments. Chi-square tests of membership in lects 1 and 2, and 3 and 4, and the social variables used in the D. C. study showed strong dependency relationships between +deaf, +deaf parents, and +before six and membership in lects 1 and 2 and between -deaf, -deaf parents, and -before six and membership in lects 3 and 4. Thus deaf people, people with deaf parents, and people who learned signs before the age of six patterned in lects that approach 'pure' ASL more closely, and hearing people, people with hearing parents, and people who learned signs after the age of six patterned in lects that do not approach ASL closely.[1]

6. Summary and conclusion

These three studies have shown that variation along the ASL to English continuum is regular, rule-governed, and describable in terms of current concepts in variation theory.

One interesting point remains to be discussed, however, and this is the fact that the Outward-Inward Agent-Beneficiary Directionality implication was the weakest implication in both the D. C. and Montana-Washington studies. One possible explanation for this is that this implication is still in flux because it is historically the last one of the three rules tested to develop implicational variation. This explanation can be partially supported by the interrule implication study showing Outward-Inward Agent-Beneficiary Directionality to be the first of the three rules to be rejected by some informants.

Hopefully, there will soon be more research on this problem as well as on other variation in ASL syntax and cherology (for example, Battison, Markowicz, and Woodward 1973). Analysis of the ASL to English continuum not only offers a crucial testing ground for variation theory but also a useful way of describing the complex variation that exists in the languages of the United States deaf community.

NOTES

The production of this paper was supported in part by NSF grant GS-31349 and NIMH grant NS-10302. I want to thank Ralph Fasold for his comments and suggestions on part of this paper.

1. The charts showing membership in these lects are not listed here but can be found in Woodward (1973c).

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