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DOING WITHOUT WORD ORDER AND INFLECTIONS: THE CASE OF  
 BRITISH SIGN LANGUAGE  
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One of the functions of language is to communicate about events, states and changes of state in the external environment. A speaker's perception of extralinguistic relationships is expressed in the relations between elements of language such as nouns and verbs. According to Fillmore (1968:21), nouns are in case relationships with verbs, and these can be captured by assigning case roles to the nouns in a sentence. Such roles have been given various labels, including e.g. agent, patient, source and goal (cf. e.g. Langendoen 1970).

It is well known that in spoken languages, inflections or prepositions and word order are the main alternative ways of indicating case roles. Some languages, such as Hungarian, have relatively free word order but an extensive system of inflections while others, such as English, rely more on word order and less on inflections to indicate case. The two systems are usually in balance so that, as Osgood points out, "Inflection seems to compensate with word order as an alternative means of keeping the syntactic house in order" (Osgood 1966:305). Fischer (1974) points out that this has been considered so fundamental a linguistic universal that it is not usually explicitly listed as such. However, as she shows, its status as a universal becomes open to question when we examine data from a manual-visual language, American Sign Language (ASL).

Fischer asserts that ASL has a basic SVO order, but relies on it only when the verb is transitive and the subject and object would otherwise be semantically and syntactically interchangeable. However, order is free (1) if the verb is intransitive; (2) if the subject and object could not be interchanged without creating a semantic anomaly; or (3) if the verb used belongs to a limited set allowing for case-marking. In other words, inflection and order are only two of the possible ways of assigning case roles in ASL.

Friedman (1976) claims that there is no basic word order in ASL, but agrees with Fischer on the other ways that case can be identified at the sentence level. In addition, Friedman goes beyond the sentence to the level of discourse and suggests that when a verb appears without a surface subject, the subject will be the last mentioned, or if there is none, then a first person subject will be assumed. She also suggests that "heavy reliance on context" (Friedman 1976:140) is another way of distinguishing the arguments of

a verb, and Edge and Herrmann (1977) show how context is sometimes important to indicate who is doing what in ASL.

Word order and inflections are syntactic characteristics of the sentence, but the work on ASL shows that the syntax and semantics of discourse as well as of the sentence are important for case role assignment in at least one sign language. In this paper I will show how the same generalization applies to another manual-visual language, British Sign Language (BSL). My analysis of data from BSL will investigate syntactic and semantic factors at both the sentence and discourse level. At the sentence level I shall discuss the syntactic factor of spatial modification and the factor of semantic plausibility; and at the discourse level I shall discuss Friedman's condition for subject assignment and the semantics or pragmatics of context. I aim to show that the assignment of case roles in BSL can only be captured by appealing to two areas of grammar, syntax and semantics, and by using two different units of analysis, the sentence and the discourse. This may have implications for both the methodology of grammatical analysis and the theory of language universals.

BSL is the native language of an estimated 40,000 deaf people in Britain. The signing community can be considered diglossic (cf. Ferguson 1959) in that an 'H' variety, which is close to English in syntax, is used in formal settings, while an 'L' variety with its own characteristic syntax is used in informal conversation and is the variety learned by deaf people as a native language. This variety fulfils functions comparable to those of Ameslan in the U.S. deaf community, while H has functions more comparable to those of signed English in the U.S. (For information on diglossia in BSL see Deuchar 1977.) In this paper the term 'BSL' should be understood to refer only to the 'L' variety, and I shall not be concerned with the 'H' variety. The data on which my analysis is based were collected during nine months of participant observation in a deaf club in Reading, England. Sign sequences were recorded in notes, on video-tape, and a thirty minute film was made.

As I have pointed out, there is disagreement as to whether ASL has a basic order. In BSL there is no basic order as far as I can determine, and the following are examples of orders found in the data:-

SVO: I KNOW SHE ('I know her')

SOV: HE YOU LOVE ('He loves you')

VOS: LOVE YOU SHE ('She loves you')

VSO(V): FORGET I TICKET FORGET ('I forgot about the ticket')

VS: RIGHT I (I'm right)

OSV: ONE I PUT-IN ('I put one in')

OVS: HOW-MUCH KNOW(Neg.) I ('I don't know how much')

This apparent freedom of order is such that order does not seem to be a factor in the assignment of case roles.

Spoken languages which do not rely on word order for the assignment of case roles often have inflections which indicate case roles in the syntax of the sentence. If we look at the syntax of sentences in BSL we find that the nearest approximation to inflection for case is spatial modification, which marks the roles associated with a limited set of verbs. This set includes verbs such as GIVE, EXPLAIN, ASK, SAY, SEE, BEAT and MOCK. These verbs have in common the semantic notion of 'transference' (cf. Edge and Herrmann 1977:144), either in the sense of something transferred from source to goal, as in GIVE and EXPLAIN something to someone, ASK (posing a question to someone), SAY something to someone, and SEE (involving movement of the eyes towards a goal); or else in the sense of action transferred from agent to patient, as in BEAT and MOCK. A class of verbs with similar semantic and formational properties is also found in ASL where, as Friedman (1975:956) states: "The choice of movement and orientation for these verbs is dependent on the location in space of both (a) the AGENT, EXPERIENCER or SOURCE, and (b) the PATIENT, BENEFICIARY or GOAL". This description fits BSL also, for as in ASL, direction of movement and orientation of the hands are from the agent or source towards the patient or goal. The system is egocentric in that the signer is the location for the first person, whether agent or patient, source or goal; and direction of movement and orientation in relation to the signer mark case roles. For a first person agent or source, movement is away from the signer towards a second or third person agent or goal, while for a first person patient or goal, movement and orientation are towards the signer. If there is no first person argument, then the signer will 'represent' a second or third person, usually in the agent or source role, with direction and orientation being away from the signer.

Spatial modification involves 'directionality' and may also involve 'reversibility'. Directionality refers to the possibility for case roles of a verb to be indicated by the direction of its movement, while reversibility refers to the possibility for case roles to be indicated by the orientation of the hands in the verb. (Cf. definitions in Fischer and Gough, to appear.) In BSL, GIVE and EXPLAIN are directional, while ASK, SAY, SEE,

MOCK and BEAT are both directional and reversible. The alternative realizations of these verbs according to direction of movement and orientation are as follows:-<sup>2</sup>

GIVE:  $\emptyset B_a B_a^{\uparrow}$  (direction away from signer) as in 'I give to you' versus  $\emptyset B_a B_a^{\uparrow}$  (direction towards signer) as in 'You give to me';

EXPLAIN:  $\emptyset 5_r 5_r^{\uparrow}$  (direction away from signer) as in 'I explain to you' versus  $\emptyset 5_r 5_r^{\uparrow}$  (direction towards signer) as in 'You explain to me';

ASK:  $\cup F_a^{\times \uparrow}$  (direction and orientation away from signer) as in 'I ask you' versus  $\cup F_r^{\times \downarrow}$  (direction and orientation towards signer) as in 'You ask me';

SAY:  $\cup G_a^{\times \uparrow}$  (direction and orientation away from signer) as in 'I say to you' versus  $\cup G_r^{\times \downarrow}$  (direction and orientation towards signer) as in 'You say to me';

SEE:  $\Delta G_a^{\times \uparrow}$  (direction and orientation away from signer) as in 'I see you' versus  $\Delta G_r^{\times \downarrow}$  (direction and orientation towards signer) as in 'You see me';

MOCK:  $\bar{5}_p 5_p^{\times \uparrow}$  (direction and orientation away from signer) as in 'I mock you' versus  $\bar{5}_p 5_p^{\times \downarrow}$  (direction and orientation towards signer) as in 'You mock me';

BEAT:  $G_a G_a^{\times \uparrow}$  (direction and orientation away from signer) as in 'I beat you' versus  $G_r G_r^{\times \downarrow}$  (direction and orientation towards signer) as in 'You beat me'.

In GIVE and EXPLAIN a change in case roles is reflected by a change in direction of movement; in the other verbs it is reflected by a change in direction and orientation. Direction, and orientation where applicable, are away from the signer as source or agent, towards the signer as patient or goal.

The following are examples from filmed conversations, using GIVE:-

HOSPITAL LETTER GIVE ('We gave the letter to the hospital').

Here the movement of the verb is away from the signer who represents the understood first person 'we', towards the third person goal, 'the hospital'. However, in the sentence

I-f CAN FORM GIVE SEND b-d-a ('If we can we'll receive a form and send it to the British Deaf Association') the movement is towards the signer, representing an understood first person goal, from an understood third person source.

The following are examples using SEE:-

SEE PAPER ('I saw it in the paper').

Here the direction and orientation of the verb are away from the signer representing first person source, towards an understood third person goal, 'it'.

SEE I t-h ('He or she will see me on Thursday').

In this sentence the direction and orientation are towards

the signer representing the goal, away from the third person source.

So in a limited class of BSL verbs the direction of movement, and in some verbs the orientation also, indicate the case roles associated with those verbs. This may be compared to inflection in spoken languages, except that it is more restricted.

In addition to this formal or syntactic means of assigning case at the sentence level there is a semantic means, which we can term semantic plausibility. This factor operates to disambiguate case roles in sentences where an alternative assignment would lead to semantic anomaly. It is similar to Fischer's "second condition" in which word order is free in ASL, which I referred to earlier. (See Fischer 1974:198.) For example, the BSL sentence

I TEN PINT LAGER DRINK

receives the interpretation 'I drank ten pints of lager' rather than 'Ten pints of lager drank me', because we know that DRINK must have an animate subject or agent. The following are two further examples from the data where only one interpretation is possible to ensure semantic plausibility:

HAVE WORK YOU ('Do you have work?') (The question is indicated by raised eyebrows.)

MY s-o-n BORROW PAPER ('My son borrowed a paper'). So we see that the factor of semantic plausibility can operate at the sentence level in BSL. While it is not a characteristic of syntactic structure like spatial modification, it relies on shared knowledge of lexical features or the rules of semantic interpretation of sentences.

But spatial modification and semantic plausibility alone are not adequate to account for the assignment of all case roles in BSL. For example, there are sentences where the arguments to which case roles would be assigned do not appear in surface syntax. When the subject or agent of the verb is missing, it can usually be determined by a syntactic condition which operates beyond the sentence at the level of discourse. This condition, which was found by Friedman (1976) to hold for ASL, also seems to hold for BSL, and can be stated as follows: the agent or source or equivalent role for a subjectless verb is assigned to the last mentioned subject if there is one, otherwise to the first person. For example, SHE must be the subject of MOCK in the following segment of discourse, even though it does not occur in the same sentence:

WIFE TALK SIGN f-n-y GOOD SHE MOCK POWELL  
 ('My wife talks and signs in a funny way. She's good.  
 She mocks Powell.')  
 In the following sequence FARE must be the subject of  
 EXPENSIVE and UP as it is the last appearing subject:

FARE GO COME TEN p EXPENSIVE UP EXPENSIVE  
 ('The fare there and back is ten pence. It's expensive,  
 it's gone up, it's expensive.')  
 In the following sentences there is no previous subject  
 that could be assigned to the subjectless verbs, so first  
 person reference is assumed:-

SUGAR PUT-IN FINISH ('I've put in the sugar')

CLEAN ALL ('I cleaned everything')

TEN p PUT-IN ('I put in ten pence')

This condition of subject assignment will also apply to  
 verbs which can be spatially modified, but where the  
 subject is not explicitly stated, as in the examples quoted  
 earlier, HOSPITAL LETTER GIVE ('We gave the letter to the  
 hospital') and SEE PAPER ('I saw it in the paper')

Where it is not the subject which is missing, but  
 another argument, case roles can be assigned on a semantic  
 or pragmatic basis, with reference to the context of the  
 discourse. While the rule governing subject assignment in  
 discourse is syntactic, and depends on the structure of the  
 discourse, the semantics of context relies rather on shared  
 knowledge at the sentence level. The semantics of context  
 is important to assign roles in a sentence such as

FIND I GARDEN ('I found (the disc) in the garden').

Here we know that the disc is the patient because it is  
 the topic of conversation, and is being displayed in the  
 hand of the person who found it. Or in the sentence

HEAR SHE ('She heard that')

where SHE is not formally marked for case, we can only tell  
 that SHE is the subject or experiencer and an understood  
 'that' the object or patient, on the basis of our contextual  
 knowledge that the topic or 'given' information in the con-  
 versation is something which might be heard by her. Otherwise  
 we might assume SHE to be the object or the patient of the  
 verb, with a deleted first person subject.

The semantics and pragmatics of context can be useful  
 not only for the assignment of case roles to deleted or  
 missing arguments, but also for the disambiguation of case  
 roles in sentences where all arguments appear, but reference  
 to sentence syntax or semantics is not enough. This will be  
 the situation in sentences where the verb does not allow  
 spatial modification and there is more than one semantically  
 plausible way of assigning case. The sentence

LOVE YOU SHE ('She loves you')

is an example: we can only assign the role of subject or

experiencer to SHE on the basis of contextual knowledge that the sentence is a comment on why the person referred to by SHE had shown concern for the man referred to by YOU.

To summarize, word order does not seem to be a factor in the assignment of case roles in BSL, and inflection, its alternative in spoken languages, is only relevant for a small class of verbs. So to account for case role assignment in BSL we have to appeal to additional factors beyond sentence syntax, i.e. the semantics of the sentence and the syntax and semantics of the discourse. Syntactic factors at both the sentence and discourse level seem to operate in conjunction with one another to assign case roles clearly and unambiguously.

What are the implications of these findings for linguistic theory? Support has been found for Fischer's (1974) contention that we must distinguish between universals which apply only to spoken languages, and those which apply to language in general. The assignment of case roles by either word order or inflections seems only to apply to spoken languages since to identify roles in British as well as American Sign Language, we have found it necessary to go beyond sentence syntax. While sentence syntax continues to be the focus of attention for some linguists working on spoken languages, others argue that this approach is too limited. The case of sign language, where the limitations of sentence syntax are particularly obvious, provides further evidence for the importance of discourse in grammatical analysis. The evidence from sign language also suggests that analysis beyond sentence syntax must be recognized in the theory of language universals if its scope is to include all languages, regardless of medium.

#### NOTES

1. In the transcription of examples, English glosses in upper case letters represent individual signs; lower case letters separated by hyphens represent fingerspelled words. A verb gloss followed by (Neg.) as in KNOW(Neg.) indicates that negation is incorporated in the verb sign.
2. Notation is based on the system used for ASL in Stokoe et al. 1976.

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