

# **RE-THINKING SIGN LANGUAGE VERB CLASSES: THE BODY AS SUBJECT**

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This paper offers a new look at the traditional analysis of verb classes in sign languages. According to this analysis (Padden 1988), verbs in many sign languages fall into one of three classes: plain verbs, spatial verbs and agreement verbs. These classes differ from each other with respect to the properties of the arguments which they encode. Agreement verbs, verbs denoting transfer, encode the syntactic role of the arguments, as well as their person and number features, by the direction of the movement of the hands and the facing of the palms. In spatial verbs, the class of verbs denoting motion and location in space, the direction of movement encodes the locations of locative arguments, the source and the goal. The shape of the path movement the hands are tracing often depicts the shape of the path that an object traverses in space. Plain verbs, which constitute the default semantic class, do not encode any grammatical features of their arguments.

The above analysis focuses on the role of the hands in encoding the relevant grammatical features. The hands are the active articulator in sign languages, and they carry most of the informational load of the sign. However, in this paper we would like to offer a novel look at verb classification in sign languages, by looking not at what the hands do, but rather at the role the body plays in different classes of verb. We argue that the basic function of the body in verb forms in a sign language is to represent the subject argument. Other grammatical functions encoded by verbs, such as 1<sup>st</sup> person, develop later, and are superimposed of the basic function of "body as subject", thus creating more grammatical complexity in the language. This analysis has the following advantages: it explains a typological peculiarity of sign language verb agreement, namely the prominence of the object over subject in verb agreement forms. It offers an explanation of why some verb forms are more complex than others, in terms of a competition between the different roles of the body in various sub-systems of the language. Finally, it makes interesting predictions regarding sign language typology and diachronic developments within sign languages.

# 1 LEXICALIZATION PATTERN IN SIGN LANGUAGES

The term 'lexicalization patterns' was first used by Talmy (e.g., 1983, 1985) in his description of how spoken languages encode motion events. Talmy (1985, 2000) points out that verbs alone do not encode all the meaning components of such events. Languages tend to be systematic about which meaning components are encoded by which types of lexical items. So, some languages (e.g., English, German, Russian and Chinese) encode manner of motion in verbs and direction of motion by prepositions or particles ('satellites' in Talmy's terms), while other languages (e.g., Hebrew, Spanish, Japanese and Turkish) encode direction of motion in the verb and the manner component is expressed by adverbials. The systematic way in which a language encodes particular components of the event by the linguistic means at its disposal is referred to as 'lexicalization patterns'.

In sign languages, the linguistic means employed to convey an event are the hands and the body of the signer, and the space around the signer. When examining lexical items denoting events in three different sign languages (American Sign Language, Israeli Sign language and Al-Sayyid Bedouin Sign Language), we find that specific formational elements of a sign may correspond to specific meaning components; that is, the hands and the body (the chest and the head) may each separately be used to encode different parts of an event. We now show that this correspondence between a part of an encoded event and the body or hands is not random, but rather that the body and the hands encode particular aspects of the event in a systematic way.

## 1.1 *Body as subject*

The signer's body is not merely a formal location for the articulation of signs, but may, in principle, be associated with a particular meaning or a particular function. We argue that in iconic or partially iconic verbs articulated on the body, the so called 'body-anchored verbs', the body represents the subject argument.

We use the term *iconicity* to refer to the regular mapping between formational elements of an expression and components of its meaning (Taub 2001, Russo 2004). This mapping can be demonstrated by showing the correspondence between formational elements and meaning components (based on Taub 2001). Take for example the verb EAT in Israeli Sign Language (ISL) and American Sign language (ASL), illustrated in Figure 1 below. The hand assumes a particular shape , moving toward the mouth from a location in front of it,

and repeats this movement twice. 'Eat' means 'to put (food) in the mouth, chew if necessary, and swallow' (Webster's New Word Dictionary, Third College Edition). A possible Lexical Conceptual Structure representation is:

1. X CAUSE [Y GO [INTO MOUTH-OF X]]

As is obvious from Figure 1, the sign EAT is iconic. However, if we go beyond the global impression of iconicity, we see that an explicit mapping between form and meaning as a set of correspondences has the advantage of showing which of the various formational elements correspond to which aspects of meaning. Such a mapping is illustrated in Table 1.



**Figure 1: The verb EAT (ISL and ASL)**

Iconic mapping for EAT	
FORM	MEANING
 -handshape	Holding an object (food)
Mouth of signer	Mouth of eater, agent
Inward Movement	Putting an object into mouth
Double movement	A process

**Table 1: Iconic mapping for EAT.**

Crucial to our point here is the correspondence between the location of the sign (the mouth) and the mouth of the eater, the agent argument in the event. In other words, the body, constituting one of the formational components of the sign, represents one particular argument in the event, the agent. It is important to note that the body does not represent 1<sup>st</sup> person. The sign EAT is signed on the mouth of the signer whether the subject in a particular event of eating is 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> person. In other words, the sign EAT has one form in all three sentences 'I eat', 'you eat' or 's/he eats', and this form is signed on the signer's mouth.

Examining a wide variety of body-anchored verbs shows that in iconic signs, the body corresponds to an argument participating in the event. The following examples are from ISL, but similar lists of words can be found in ASL as well.

2. Psych verbs (Location: chest): HAPPY, LOVE, SUFFER, UPSET, BE-FED-UP-WITH, HURT: Chest corresponds to the location of emotions of the experiencer argument

3. Verbs of mental activities (Location: temple and forehead): KNOW, REMEMBER, FORGET, LEARN, WORRY, THINK, DREAM, UNDERSTAND, GRASP, INFORM (an idea): Temple or forehead represents the site of the mental activity of the experiencer.

4. Verbs of perception (Location: sense organs): SEE, LOOK, HEAR, LISTEN, SMELL: Eyes, ear or nose represents the site of the activity of the experiencer

5. Verbs of saying (Location: mouth): TALK, SAY, ASK, ANSWER, EXPLAIN, SHOUT, WHISPER: Mouth represents the relevant part of the body of the agent argument

6. Change-of-state verbs (Location: face, chest, eyes): BLUSH, GET-WELL, WAKE-UP: Face, chest, eyes represent the relevant part of the body of the patient (undergoer) argument

As the above list shows, the argument represented by the body and corresponding to specific features of the body can be associated with a variety of thematic roles: agent, patient, experiencer, recipient. However, the choice of the particular argument to be represented by the signer's body is not random. In case of a one place predicate, the body naturally is associated with the sole argument of the predicate. In case of transitive events, we find that the argument associated with body features is the highest ranking argument: the agent in <agent, patient> verbs (e.g., EAT, DRINK, LOOK) or <agent, patient, recipient> verbs (such as ASK, INFORM, EXPLAIN), and the experiencer or perceiver in <experiencer, theme> verbs (e.g., SEE, HEAR, LOVE).<sup>1</sup> According to general principles of mapping between thematic structure and syntactic structure (e.g., Fillmore 1968, Jackendoff 1990, Grimshaw 1990, Falk 2006 and others), the argument associated with the highest ranking thematic role is the *subject* argument. The correct generalization, then, is that the body is associated with the subject argument of the verb rather than with a particular thematic role. An implication of

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<sup>1</sup> Psych verbs of the *'frighten'*-type, whose arguments are a causer and an experiencer, and exhibit a different thematic-syntactic mapping, are not attested in ASL or ISL. In order to express an event of frightening, ISL uses a periphrastic light verb construction 'GIVE FRIGHT', whereas in ASL one would use a paraphrase such as 'I was frightened because of...!'

our analysis is that the basic lexicalization pattern when representing a state of affairs in sign languages is BODY AS SUBJECT.

In other words, the body represents or corresponds to some property of the subject argument (that it has feelings, is sentient, has a mouth etc.). In spoken languages, properties of the arguments are inferred from or are part of the meaning of verbs. For example, the verb *sneeze* implies that the subject has a nose; the subject of *lick* has a tongue; the subject of *faint* is animate, and the subject of *angry* is sentient. In signed languages, such properties can actually be represented by some aspects of the form of the sign, in particular, parts of the body. If the sign denoting an event is signed on some part of the body, then the body is interpreted as associated with properties of the subject argument.<sup>2</sup>

### **1.2 Hands as event**

The iconic mapping for the sign EAT points to a basic asymmetry between the body and the hands. The body represents one aspect of the event, its subject argument. The hands, in contrast, have more degrees of freedom. They have a specific shape, in a specific orientation, and move in a specific manner and a specific direction. As a consequence, the hands may represent many more aspects of the sign's meaning components. Aspects of the movement can correspond to temporal aspects of the event (such as telicity), direction of motion often encodes spatial thematic roles of the arguments such as source and goal, and the final location of the sign is associated with the recipient argument. The handshape often represents the argument in motion (the theme) or the manipulation of the (patient) argument by the subject.<sup>3</sup> In EAT, for example, the inward movement of the verb represents putting something into somebody's mouth; the specific handshape represents holding or manipulating a solid object, food in the case of 'eat'; and the double movement denotes an action, or an atelic event.

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<sup>2</sup> Kegl (1986) also suggests that the body is associated with the subject argument. While her analysis is not incompatible with the one presented here, it differs in several important ways. First, she refers to BODY SHIFT ('a subtle shift of the body into a specific position in the signing space', p.289), and not to the body itself as part of the phonological components of the sign. Second, she argues that BODY SHIFT (which she calls 'Role prominence clitic') is a morpheme, functioning both as a subject clitic and as indicating 'role prominence' (a term left vague in her analysis). We do not argue for a morphemic status of the body, nor do we make any claims about its syntactic functions.

<sup>3</sup> See Wilbur (in press) for a detailed analysis of the various manual components of the signs and their semantic correlates.

The hands, then, may encode many more aspects of the event than the body. This is to be expected. The hands are much more versatile than the body: first, they can move in space; second, they can take different handshapes; third, they come in pairs. The movement component in itself is complex, as it includes both manner of movement and direction. The body, on the other hand, does not show any of these properties. It does not move in the same way that the hands can, and there is only one body. In this sense, it can encode considerably fewer aspects of the event. Interestingly, it encodes one particular aspect of the event, an argument – the subject. This argument is in a sense privileged, since it is set apart formationally from the other meaning components of the event. We find then, that a basic lexicalization pattern in sign languages provides support to the primacy of subject in language:<sup>4</sup> it is the argument represented by the signer's body, to the exclusion of all other aspects of the event.

### ***1.3 Factors obscuring the basic pattern***

The basic lexicalization pattern 'body as subject' described above is most salient in body anchored iconic verbs, which belong to the class of plain verbs. In other domains of the lexicon and grammar of any given sign language, this pattern is often obscured by other structures and processes in the language. The versatility of hands vs. the stability of the body may mean that the hands assume more and more roles in the lexicon and grammar of sign languages as the lexicon expands, resulting in forms which do not conform to 'body as subject'. We mention briefly two such factors here, and examine in depth the third factor, namely the role of the body in inflected forms of agreement verbs.

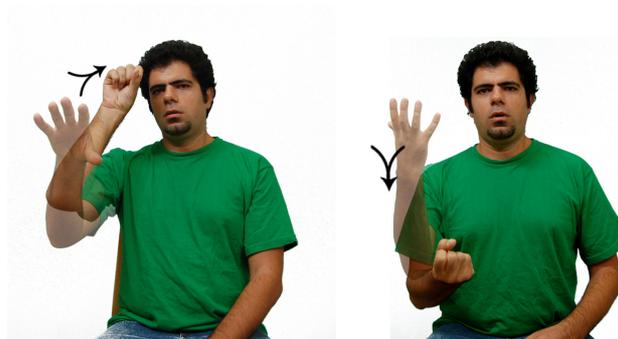
First, not all body parts are possible locations for the articulation of a sign. Typically, the signing space is on or in front of the body, in the area between the waist and the head. Body parts that are lower than the waist, then, hardly ever function as locations for signs. Therefore, actions which are performed by the legs and feet of the subject are not articulated by these appendages; rather, the legs and feet are represented by the arms and hands. It is very common across sign languages for the index and middle fingers to represent the two legs. Verbs that denote actions such as standing, getting up, jumping, falling, sitting, walking (in ASL and ISL) have a  handshape on the dominant hand, often performing the action on the non-dominant  hand (in the horizontal plane, palm up or down, representing a surface). Verbs denoting a special way of walking, such as walking on high heels, are expressed by a

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<sup>4</sup> For an in-depth discussion of the primacy of subject in language, see Meir et al (2007).

 handshape in ASL and a  handshape in ISL, with the pinky pointing down. In such verbs, then, the body is not part of the phonological structure of the sign, and properties of the subject are represented by the handshape (e.g., that it has legs).

Second, body represents subject only for animate beings. Events involving inanimate subjects are articulated by the hands, usually in the space in front of the signer. Quite often, the dominant hand is performing the sign on the non-dominant hand. Take, for example, the verb 'eat'. In English and other spoken languages, the same verb can be used metaphorically with inanimate subjects, as in *The acid ate the metal*, *The house ate all my savings*. In ASL and ISL, the verb EAT cannot refer to inanimate referents. The iconicity of the sign, especially the location (the mouth of the signer), constrains the possible contexts and metaphorical extensions of the sign (Meir 2004). Similarly, the sign ABSORB (ISL), when signed on the temple (Figure 2a), can only refer to a human subject absorbing information. When the sign is signed in neutral space (Figure 2b) it can refer to an inanimate subject, like a sponge absorbing water.<sup>5</sup> It seems that the properties of the body itself, the body of an animate being, constrain the possible meanings that the body can represent.



**Figure 2: ABSORB: a. with a human subject.**

**b. with a non-human subject.**

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<sup>5</sup> There are functions in ASL and ISL, notably theatrical or poetic functions, under which the body can be used for inanimate objects. These are cases of personification, where objects take on animate-like qualities. One well-known deaf performer of humorous ASL narratives depicted the flight of a golf ball by using the head, complete with expressive eyes and other facial features as if the golf ball were human. The golf ball, 'happily sitting on a tee' (with the tee represented by a hand in appropriate scale underneath the chin), was 'surprised to find itself sailing through the air' when it was hit by a golf club. Such forms are rarely found in everyday ASL conversation, unless the signer intends to make a humorous play on the language.

## 2 THE BODY IN AGREEMENT VERBS: 1<sup>ST</sup> PERSON

Agreement verbs are those verbs which encode person and number features of their subject and (indirect) object arguments. Semantically, agreement verbs denote transfer events, the transfer of an entity (concrete or abstract) from a former to a future possessor. Unlike plain verbs, which have one verb form, agreement verbs have numerous forms. However, each agreement verb also has a citation form, a form used as a dictionary entry, to represent the lexeme. Citation forms of agreement verbs still manifest the 'body as subject' strategy: the hands move with respect to the body. The move away from the body when the subject argument is the source possessor (in verbs such as GIVE and SEND, the so-called 'regular agreement verbs'), and towards the body when the subject argument is the goal possessor (in verbs such as TAKE or COPY, the so-called 'backwards verbs'). However, in inflected forms of agreement verbs, the body is no longer subject, but rather it encodes 1<sup>st</sup> person.

Inflected forms of agreement verbs incorporate the grammatical category of person, encoded in the pronominal system of the language by employing a contrast between the signer and the space around the signer. In the pronominal system of ASL and ISL, and many other sign languages, the signer's body represent 1<sup>st</sup> person, while locations in the signing space are associated with non-1<sup>st</sup>-person referents (Meier 1990). The association of 3<sup>rd</sup> person referents to specific locations in space is often achieved by signing the sign for that referent and then pointing to, or directing the gaze towards a specific point in space. Subsequent pointing towards that location in space (often referred to as R(eferential) locus, cf. Lillo-Martin and Klima 1990) has the function of pronominal reference. Pointing towards oneself denotes 1<sup>st</sup> person pronoun, and pointing towards an R-locus already established in the signing space denotes pronominal reference to the referent associated with the given R-locus.

Inflected forms of agreement verbs build on the system of R-loci, and the opposition between body and space. In these forms, aspects of the movement of the hands encode the syntactic and semantic roles of the verb's arguments, while the initial and final locations of the sign are associated with R-loci and encode pronominal features of the arguments. The hands move between the R-loci associated with the subject and (indirect) object arguments of the verb in a systematic way. The linear order of the R-loci encodes the semantic role of the arguments: the hands move from the source argument to the goal, or recipient argument. The

facing of the hands, that is the direction towards which the palm or fingertips are oriented, encodes their syntactic roles: the hands face the syntactic indirect object (Meir 1998a,b).

In these forms, the body represents 1<sup>st</sup> person, not subject. Let us look at the following verb forms: <sub>1</sub>GIVE<sub>2</sub> ('I gave to you'), <sub>2</sub>GIVE<sub>1</sub> ('You gave to me'), <sub>2</sub>GIVE<sub>3</sub> ('You gave to him/her'). In all of these forms, the hands move from the subject R-locus to the object R-locus. If subject is 1<sup>st</sup> person and object 2<sup>nd</sup> person, the hands move from the body towards the direction of the addressee. If subject is 2<sup>nd</sup> person and object is 1<sup>st</sup> person, then the direction of movement is reversed. In case both arguments are non-1<sup>st</sup> person, the body is not involved in the form, and the hands move from the R-locus associated with the addressee towards another locus in space, associated with the 3<sup>rd</sup> person referent.

Agreement verbs, then, encode two grammatical categories: grammatical person and syntactic roles. Person is encoded by the body and locations in space: a locus on or near the region of the signer's chest marks 1<sup>st</sup> person. Any other locus around the body marks non-1<sup>st</sup> - person, including 2<sup>nd</sup> and 3<sup>rd</sup> person (Meier, 1990). The syntactic roles of the arguments are encoded by the movement of the hands between these loci. It follows then, that in fully inflected forms of agreement verbs, body is no longer subject; rather, it is 1<sup>st</sup> person. The basic, default lexicalization pattern is obscured by a morphological process, which makes use of the same formational elements, but associates them with different grammatical functions.

### **3 SIGN LANGUAGE VERB CLASSES RECONSIDERED: THE ROLE OF THE BODY**

With the understanding of the role of the body and the roles of the hands in the various types of verbs in ASL and ISL, we can return to the classification of verbs in these languages, and offer an alternative way of characterizing these classes, by taking into consideration the role of the body in addition to the role of the hands.

Plain verbs, in particular body anchored plain verbs, can now be defined as the set of verbs in which the body is subject and the category of grammatical person is not encoded. In the inflected forms of agreement verbs, the body is no longer subject. Rather, body is 1<sup>st</sup> person, locations in the signing space are associated with non-1<sup>st</sup>-person referents, and the hands, in particular the direction of movement and the facing of the hands, encode syntactic and semantic roles of the arguments. The detachment of the event from the body offers more flexibility in the encoding of the event: the body-space opposition represents the grammatical

category of person (1<sup>st</sup> vs. non-1<sup>st</sup>), while the movement and the facing of the hands can encode the syntactic roles of the arguments.

Spatial verbs, including classifier constructions, are those with beginning and end points determined by spatial referents, that is, by their actual or designated locations in a spatial array, and not by the syntactic arguments of subject or object. The locations encoded by verbs in this class are interpreted analogically and literally, and not as representing grammatical arguments (Padden, 1998). In such signs, the movement begins at some location and ends at a different location, depicting the trajectory of motion of an entity. Spatial verbs, e.g. DRIVE-TO and MOVE-TO, incorporate fine distinctions of location and movement throughout the signing space in front of the body, but importantly, do not contact the body itself. T. Supalla (1982) describes verbs of motion and location as existing in appropriate 'scale'. If the signs contact the body, then the scale becomes relative to the signer's body, and the meaning changes to 'a toy car driven into the side of a human body.' In spatial verbs and classifier constructions, then, the hand(s) represent entities moving in space; the body is typically not involved in the event at all, or can be used as a spatial reference point (the Ground cf. Talmy 1983), with respect to whom the motion event is depicted.

The characterization of the three verb classes is summarized in Table 2:

<b>Verb class</b>	<b>Body</b>	<b>Hands</b>	<b>Space</b>
Plain verbs	Corresponds to Subject	Do not encode properties of arguments	-----
Agreement verbs	1 <sup>st</sup> Person	Encode syntactic and semantic roles of arguments	Non-1 <sup>st</sup> -person referents
Spatial verbs	Spatial reference point or not involved	Encode locative roles of arguments	Locations in space

**Table 2: Verb classes redefined**

## 4 A SIGN LANGUAGE TYPOLOGICAL PUZZLE

### 4.1 *Object over subject primacy*

Sign language verb agreement presents interesting challenges to linguistic theory, because it is similar to, but also very different from verb agreement systems in spoken languages. One difference is that in sign languages verb agreement is marked only on one class of verbs, verbs denoting transfer, whereas in spoken languages agreement systems usually apply to all the verbs in a particular language.<sup>6</sup> A second difference is that in the sign language system, agreement with the object takes precedence over agreement with the subject. This contrasts with the situation in spoken languages, where the subject is the highest ranking argument in the Grammatical Relations (GR) Hierarchy (Greenberg 1966: 37-38) and therefore the most accessible argument for verb agreement. This hierarchy implies that if a language has object agreement, it also has subject agreement, but not vice versa. We expect then to find spoken languages with subject agreement and no object agreement, but not languages with object agreement and no subject agreement (see e.g., Keenan 1976: 316, Lehmann 1988: 64). The hierarchy also implies that within a given language, if a verb form encodes agreement with object it also encodes agreement with subject. In sign languages, this is not the case. First, no sign language is known to have subject agreement and no object agreement. But more crucially, there are several phenomena in the verb agreement system of particular sign languages that result in forms marked for object agreement but not subject agreement. Two phenomena are described here.

(a) *Single agreement verbs*: In ASL and ISL, agreement verbs fall into a number of subcategories. Some verbs agree with only one argument. In such verbs, the beginning point of the verb is marked for being located at some body-part (mainly some part of the face) and therefore is not determined by the R-locus of the other argument of the verb. ASK (ISL) is such a verb: its initial location is near the mouth, and its final location is towards the R-locus of the object of the verb. Even if the subject is not 1<sup>st</sup> person, the verb nonetheless begins at a location near the mouth. Thus a verb form meaning 'He asked you' has the form ASK<sub>2</sub> rather than <sub>3</sub>ASK<sub>2</sub>. Examples of other single-argument agreement verbs in ISL are: ANSWER, EXPLAIN, TELL (mouth), SEE (eye), VISIT (eye), CARE-(for) (forehead), TELEPHONE (ear). In ASL, single-argument agreement forms include SEE, TATTLE-ON, SPY-UPON. Interestingly, in these verbs it is always the subject agreement marker (that is, the R-locus

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<sup>6</sup> For an analysis addressing this issue, see Meir (2002).

associated with the syntactic subject) that is omitted. The object agreement marker, then, seems to be obligatory, while the subject marker is not. The same phenomenon is described in other sign languages, e.g., Danish SL (Engberg-Pedersen 1993: 191), and Italian Sign Language (LIS) (Pizzuto 1986: 25-26).

(b) *Subject agreement marker omission*: It has been observed that the subject agreement marker is optionally deleted (Padden 1988, Bahan 1996, Liddell 2003). As Padden points out, the subject agreement marker of a verb may be optionally deleted, whether it is realized as the beginning point of the verb (as in 'give'-type verbs) or as its end point (as in 'take'-type verbs). When the subject agreement marker is deleted, Padden notes, “the resulting form has a reduced linear movement”. (ibid. p. 117). However, when the subject of such reduced verb forms is 2<sup>nd</sup> or 3<sup>rd</sup> person, signers tend to sign the verb from the body, not from a location near the R-locus of the subject. In other words, when the R-locus functioning as subject agreement marker is omitted, the verb often anchors to the body in its initial point, agreeing only with its object. Such verb forms resemble the single-agreement verb forms discussed in the previous section.<sup>7</sup>

Sign languages, then, appear at first to have a reverse hierarchy with respect to verb agreement: the object is more prominent than the subject. If a verb agrees with only one argument, it is the (recipient) object argument. And if a verb form encodes agreement with subject, it encodes agreement with object as well. Several researchers have noticed this peculiar behavior, and tried to offer an explanation. Janis (1995: 220) points out that the agreement hierarchy of ASL parallels the hierarchies found in other languages for case markers. Meir (1998b, 2002) builds on this observation, and analyzes the facing of the hands (which, according to her analysis marks the syntactic roles of the arguments) as marking case relations. However, both Janis and Meir admit that sign languages are still unusual in that case relations are marked on the verb rather than on the arguments. Thus, no satisfactory solution has been offered so far for this typological puzzle.

We suggest that the puzzle can be resolved by taking a new look at the sign language verb classification, one that takes into consideration the role of the body in the three verb classes. Such an approach will show that the subject is the most prominent argument in sign

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<sup>7</sup> When the object is 1<sup>st</sup> person, the verb retains its movement towards the signer's body. In such forms, the body is 1<sup>st</sup> person and not subject. The single agreement verb forms described here occur, then, only for non-1<sup>st</sup> person objects.

languages as well, but that this prominence is manifested in a somewhat different way in sign languages.

#### **4.2 *The solution***

As we pointed out in section 3 above, an important difference between agreement verbs and plain verbs is in the role of the body. In plain verbs, the body represents the subject, and the category of person is not encoded. In agreement verbs, the body encodes 1<sup>st</sup> person, and the hands take care of all the rest, that is, encoding non-1<sup>st</sup> person referents as well as their syntactic roles.

Turning back to single agreement verbs, we can now suggest a solution to the typological puzzle they present. Single agreement verbs can be regarded as a kind of ‘hybrid’ of plain verbs and agreement verbs. As with plain verbs, in single agreement verbs the body represents the subject. The hands, on the other hand, behave as in (full) agreement verbs: they encode non-first-person features, as well as the syntactic object. These verbs, then, represent the subject by the body. What is dropped in these forms is not the subject marker, but rather the specificity with respect to person. These verbs retain their trajectory with respect to the body as subject, as they still move from near the body outward (or toward the body if a backwards verb). Our analysis suggests that reference to the subject is not optional, but rather obligatorily represented by the signer's body. In other words, the subject is not encoded by the verb agreement system, but rather by the lexical form of the verb, as in plain verbs. In a way, the subject is more deeply entrenched in plain verbs and single agreement verbs than in full agreement verbs, because it is part of the lexical entry itself, and not added by an inflectional affix.

This line of thought suggests that the subject is a privileged argument in both signed and spoken languages. But the two modalities afford different possibilities for expressing this special status. The manual-visual modality makes use of the natural asymmetry between the body and the hands to encode the subject-predicate asymmetry in the form of lexical items denoting state of affairs. The asymmetry is encoded in the structure of lexical items in these languages. Grammatical processes such as verb agreement may cause this pattern to become opaque, but this basic tendency surfaces as a default pattern on various occasions. The auditory modality of spoken languages cannot encode features of the subject in the lexical structure of words. The special status of the subject is expressed in the grammar, by being the most accessible target for various morphological and syntactic processes.

## 5 COMPETING ROLES OF BODY: SUBJECT, 1<sup>ST</sup> PERSON, HUMAN BODY

The examination of the role of the body in plain vs. agreement verbs shows that the body may subsume different grammatical functions in the language, both building upon different properties of the human body. Different sub-systems of the language make use of these different properties of the body. Humans use their body to perform various kinds of actions. Hence the body may be used to represent these actions, from the perspective of one particular argument participating in the event, the subject. This aspect of the body is encoded in the lexical form of plain verbs. The body is also the body of the signer, the addressor in the communication situation. The addressor's role is encoded in the linguistic category of person; the body represents 1<sup>st</sup> person, as in the pronominal system and inflected forms of agreement verbs.

The body also may stand for a human body and all its various organs: the mouth, eyes, ears, forehead, chest, arms etc. Pointing to a specific organ can have the function of referring to that organ. And indeed, the signs for eyes, nose, mouth, heart, arms and other body organs are very often deictic signs, pointing to the relevant organ. Signs referring to actions performed on various body organs may be modulated to express the specific part of body involved in the event. The signer can use his/her body to indicate where on the body he was hit in an event expressed by the following sentence – '*He hit me on the arm.*' Depending on where on the arm the signing hand makes contact with the body, for example, the upper or lower part of the arm, the signer can specifically mark where on the arm the event took place. Or, in an event such as '*The surgeon cut open my chest,*' the sign OPERATE involves a short contacting movement down the signer's own sternum. The signer can contrast this location with surgery elsewhere on the body, such as brain surgery (contact on some part of the head) or a cesarean section (on the abdomen). In these forms, the upper torso is available as a detailed set of locations, used for signs that refer to specific points on the body.

These three different roles, of representing the subject, 1<sup>st</sup> person and locations on the body, are employed in three different sub-systems of the language. Yet there could be incidents where they can compete with each other. For example, in single agreement verbs the body represents the subject; but it is also "needed" to represent 1<sup>st</sup> person object forms, such as in (ISL) 'he asks me'. Similarly, a location on the body may represent not only an event happening to the signer, but also the signer acting on a body part of a 3<sup>rd</sup> person referent, as in 'I combed his/her hair'. How do sign languages resolve such competitions? It turns out that such forms are indeed more complex and complicated, and different sign

languages offer different solutions to these problems. We briefly examine two cases here: 1<sup>st</sup> person object forms of single argument agreement verbs, and transitive verbs denoting body activities.

### **5.1 *1<sup>st</sup> person object forms of single argument agreement verbs***

In single argument agreement verbs, the initial location of the sign is on the body, and the hands then move towards a location in space associated with the object argument. But if the object argument is 1<sup>st</sup> referent, then both initial and final locations of the signs are on the body. If the same body location is used, then the sign would have no path movement at all, resulting in a phonologically impossible sign. How do sign languages resolve this conflict? ISL and ASL present two different strategies. In ISL, a verb form such as 'he asked me' starts at the R-locus associated with the subject referent ('he'), moves towards the mouth (the lexically specified location of the sign), and then moves down towards the signer's chest, the location encoding 1<sup>st</sup> person. Such a form, then, is more complex than regular inflected forms of agreement verbs, since it has setting specifications for three distinct locations: the subject's R-locus, the mouth and the chest. Similarly, the verb form 'you see me', starts at 2<sup>nd</sup> person locus, moves towards the eyes and then towards the chest. ASL has this strategy too for some verbs, such as SEE and TELL.

ASL also has a different strategy, used with some verbs. For example, a verb form meaning 'He phoned me' starts at the ear, then moves to the R-locus established for the 3<sup>rd</sup> person, and then moves to the signer's chest. In ASL, as in ISL, such forms have specifications for three settings, but the ordering of these settings is different: the movement is from location on the body, to the subject R-locus, and then to the object R-locus. If the object is 1<sup>st</sup> person, it moves to the signer's chest; but it can move to other R-loci as well. In ISL, such forms are restricted to the object being 1<sup>st</sup> person. When the object is non-1<sup>st</sup> person, the verb cannot encode the subject agreement marker, resulting in single argument agreement verbs. The differences and similarities between ASL and ISL show that solutions to similar linguistic problems can take different forms.

### **5.2 *Transitive verbs denoting body activities.***

Signs for verbs denoting actions performed on body organs, such as BRUSH-HAIR vs. BRUSH-TEETH, HIT-ON-SHOULDER vs. HIT-ON-FACE, are signed on the respective body organs. Such forms take advantage of the fact that the body of the signer is always there in the discourse event, and therefore reference to body organs can be done simply by pointing to or signing a sign near the relevant organ. In such forms, the body is not necessarily

associated with the subject argument or with 1<sup>st</sup> person, but rather as a real-world entity that is being employed in the signing discourse as a referential device. However, the default interpretation of such forms is that the body is also the signer's body, hence 1<sup>st</sup> person. The unmarked interpretation of a form such as BRUSH-HAIR, then, is 'I brushed my hair'. But how does one sign 'I brushed her hair?' Signing the sign on the signer's head would tend to be interpreted as brushing one's own hair, while performing the sign in neutral space, in the direction of the R-locus associated with the 3<sup>rd</sup> person referent, loses the specification with respect to the hair. Such forms are notoriously difficult, and signers of different languages may devise different strategies to meet such a challenge. One strategy is to sign the sign first on the signer's body, specifying the exact location on the body where the action takes place, and then directing the sign towards the other referent, specifying the grammatical object. Another technique is to break the transitive event into two intransitive sub-events, specifying what each of the arguments is doing. Thus a clip showing a girl brushing her mother's hair can be conveyed as 'MOTHER SIT; GIRL COMB'. We elicited depictions of three actions involving body parts in two languages: ISL and ABSL. These clips showed: a girl feeding her mother, a girl brushing her mother's hair, and a man tapping on a girl's shoulder. Responses from 16 ABSL signers (both adults and children, age range 4-~40) and 17 ISL signers (age range 30-90) were coded and analyzed. Of the 63 ABSL responses, 22 involved verbs performed on the signer's body (35%), 12 were signed towards a location in space (19%), 20 forms involved signing the sign on the signer's body and then signing it towards a location in space and 7 were signed in the reverse order. Two forms involved three verbs: other-self-other. It seems, then, that ABSL prefers body anchored signs, or body anchored signs first and then directing the verb away from the body.

In ISL we find a different pattern: of the 72 responses, only 15 were body anchored (about 20%), whereas 39 verb forms were directed towards a location in space (54%). 23 forms were complex: self-other (15), other-self-other (4), (3) and self-other-self (1).

These results indicate that in both languages there is no one established form for expressing such events, but each language shows different preferences. In ABSL body anchored signs are preferred, as well as complex forms starting with body anchored signs. In ISL, signs directed towards locations in space are preferred, and the ordering of the signs in the complex forms varies. As with the 1<sup>st</sup>-person object forms above, similar challenges may result in different solutions, or at least different tendencies in different sign languages.

## 6 CONSEQUENCES AND PREDICTIONS OF 'BODY AS SUBJECT' THEORY

We argued that 'body as subject' is a basic default lexicalization strategy in sign languages, and that verb agreement is a more complex mechanism, which builds on this basic strategy but also obscures it, as it involves an additional grammatical category (grammatical person) and the detachment of the subject from the body. Since 'body as subject' is more basic, the following predictions emerge: (a) If a sign language has verb agreement, it must also have 'body as subject' verbs (that is, plain verbs) but not vice versa. (b) From a diachronic perspective, the appearance of 'body as subject' verbs precedes that of agreement verbs. That is, a sign language would move from having basically 'body as subject' verbs towards adding verb agreement to its verbal system only in later stages.<sup>8</sup>

We describe here two languages conforming to these predictions: Al-Sayyid Bedouin Sign Language (ABSL), a young language with plain verbs but no agreement verbs, and Israeli Sign Language (ISL), a language that did not have verb agreement in earlier stages of its history, and developed this system in later stages.

### 6.1 ABSL: A sign language with no verb agreement

The Al-Sayyid Bedouin group was founded about 200 years ago in the Negev region of present-day Israel. Originally *fellahin* 'peasants' from Egypt who worked for traditional Bedouins as laborers, the Al-Sayyid now function autonomously and are regarded by outsiders as Bedouin. The group is now in its seventh generation and contains about 3,500 members, all of whom reside together in a single community exclusive of others. Consanguineous marriage has been the norm in the group since its third generation. Such marriage patterns are common in the area and lead to very strong group-internal bonds and group-external exclusion. It is indicative that the Al-Sayyid still view themselves as a single large family, though now subdivided into subfamilies.

In the fifth generation since the founding of the community (about 70 years ago), four deaf siblings were born into the community. In the next two generations, deafness spread in many other families as well. The number of deaf individuals in the community today is about one hundred. The particular distribution of deafness in the community, typical of recessive congenital deafness (Lane, Pillard, and French 2000), has had socio-linguistic implications:

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<sup>8</sup> We do not claim, however, that all sign languages must develop verb agreement as they grow older. Our claim is that if a sign language develops verb agreement, we expect such a development to follow a stage when the language had only 'body as subject' verbs.

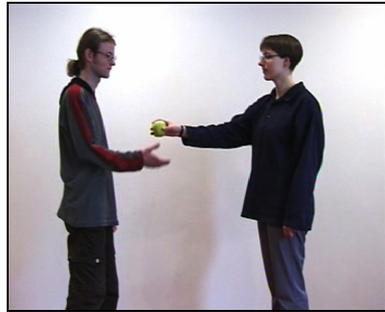
deaf members of the community are integrated into its social structure and are not shunned or stigmatized, and a sign language developed in the community as a means of communication, used by both deaf members of the community and a significant fraction of its hearing members (Kisch 2000).

The sign language, Al-Sayyid Bedouin Sign Language (ABSL) is different in lexicon and structure from other sign languages used in the region, including Israeli Sign Language (ISL) (Sandler et. al. 2005) and Jordanian Sign Language (LIU) (Al-Fityani & Padden 2006), and, as expected, the languages are not mutually intelligible. In an earlier study, we showed that ABSL developed consistent SOV word order within a span of generation, which is different from the word order of the ambient signed and spoken languages (Arabic and Hebrew) in the region. What we did not find is inflectional morphological processes such as verb agreement. As a result of the lack of verb agreement morphology in ABSL, the basic lexicalization pattern of 'body-as-subject' is more apparent. Of the three verb classes of many other sign languages - plain, agreement and spatial - ABSL has only two: plain verbs and spatial verbs. Verbs denoting transfer, which in many sign languages constitute the class of agreement verbs, behave like plain verbs in ABSL.

This observation is based on data elicited from 9 signers of the second generation (age range 28-~45), and 12 signers of the third generation (age range 4-24). The signers were shown a set of short video clips set up to elicit a range of transitive and intransitive verbs across different semantic categories. From these we identified a subset of clips as involving the following actions of transfer between two entities: GIVE, THROW, CATCH, TAKE, and FEED. Two other clips involved the actions of SEE and SHOW, which in many sign languages behave as agreement verbs. We then analyzed the signers' responses to these elicitation clips, resulting in a total of 201 verb forms (which include repetitions and descriptions of single events with two clauses).

Of the 201 transfer forms produced, 176 involved movement with respect to the body: center-out movement when the subject is the source (as in GIVE, THROW and FEED), or center-in if the subject is the goal (as in the backwards verbs TAKE and CATCH). There was little or no shifting of the movement to the side; instead the movement was either center-out or center-in. The center-out/in movement appeared despite the fact that the action clips showed the actors as transferring an object from one side of the screen to the other. Signers did not mimic the direction of motion in the action clip; instead they used movement along

their own central plane. Figure 3 shows pictures from an action clip in which a woman gives a ball to a man. In her response, the signer indicates that the woman is to her right on the screen, and the man to her left, but her verb form did not make use of either of these locations; instead the movement of the verb GIVE was center-out. The signer's response is shown in Figure 4 below.



**Figure 3: Woman gives ball to a man.**



STAND-right

STAND-left

GIVE

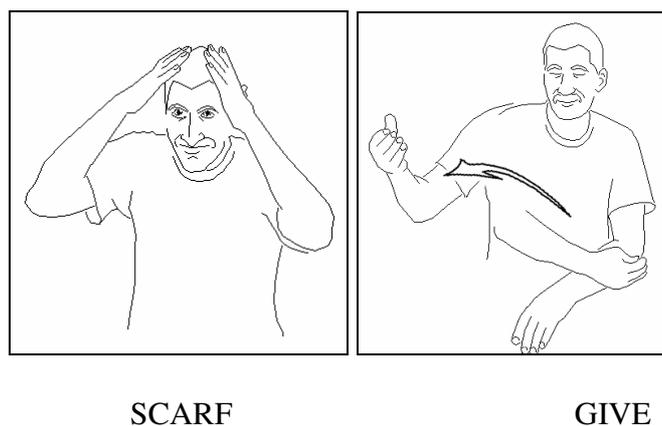
**Figure 4: 'He's standing here; she's standing there. She gave (the ball) to him.'**

In a smaller number of responses (25 of 201), signers used a form with path movement not from the body, but from one side to the other (as illustrated in Figure 6). On closer analysis, we noticed that these involved holding or manipulating an object and moving it to another location. For example, five of these responses came from an action clip in which a man picks up a scarf lying on the floor and moves it in front of the woman who then accepts the scarf (Figure 5). This action is less like one of transfer than of picking up the scarf from its initial position on the floor and moving it to the woman's location. The scarf was not initially in the possession of the man, but on the floor in front of him. We analyze these verb productions as spatial verbs, since they conform to those produced by the same signers in

response to action clips in which an object is moving through space with no transfer involved. For example, when describing a ball being thrown through a hoop across the room, signers often depict the trajectory of the motion of the ball by moving the hand from one side of the signing space to the other. Of the 13 clips of the younger generation involving movement to the side, 12 came from the clips showing a seeing and a showing event, and the verb form was accompanied by a movement of the head to the side



**Figure 5: Man moves scarf to woman.**



**Figure 6: ‘There’s a scarf; he handed (it) over (to her) (left to right).’**

ABSL, then, does not have a verb agreement system. Crucial to our point here is the default lexical pattern of 'body-as-subject' that verbs of transfer in ABSL show. In these verbs, the body represents the subject argument, whether the subject is the source of transfer (as in GIVE, THROW and FEED) or the goal of transfer (as in TAKE and CATCH). These forms do not encode person distinctions. That is, signers did not vary the direction of the verb form when the person of the subject and object of the clause varied. Verbs that involve transfer from one entity to another behave like the default class of plain verbs.

As pointed out above, in sign languages with a verb agreement system the body is 1<sup>st</sup> person, and the hands encode the syntactic roles of the arguments. In such a system, the

'body-as-subject' pattern is no longer apparent, since the category of person is superimposed on it. The ABSL verb system does not encode grammatical person, hence giving supportive evidence to the basic 'body-as-subject' pattern.

## ***6.2 Israeli Sign Language: The diachronic perspective***

Israeli Sign language (ISL) is a comparatively young sign language, which came into existence as the Israeli Deaf community evolved, beginning about 70 years ago. Unlike ABSL, ISL developed in a pidgin-like situation. The members of the first generation of the Deaf community come from different backgrounds, both in terms of their country of origin, and in terms of their language. A few of that generation were born in Israel, but the majority were immigrants who came to Israel from Europe (Germany, Austria, France, Hungary, Poland), and later on from North Africa and the Middle East. Some of these immigrants brought with them the sign language of their respective countries. Others had no signing, or used some kind of homesign.<sup>9</sup> Today, four generations of signers exist simultaneously within the Deaf community: the very first generation, which contributed to the earliest stages of the formation and development of the language, to the fourth generation, that has acquired and further developed the modern language as a full linguistic system.

While the signing of the first generation signers (age 65 and older) shows considerable individual variation in terms of vocabulary, word order and grammatical devices, the signing of this generation is consistent in lacking verb agreement. Older signers usually do not inflect transfer verbs at all. They use them as plain verbs, similar to our findings in ABSL. Signers in their late 40s and 50s use agreement verbs as single agreement verbs, originating from the body and agreeing with the (recipient) object. Younger signers (in their 30s and younger) inflect agreement verbs for both subject and object, but the object-agreement-only forms are still being used as well.

Engberg-Pedersen (1993: 193) describes a similar tendency in Danish Sign Language: older signers tend to use agreement verbs as single-agreement verbs, agreeing only with their (indirect) object argument. Younger signers in contrast use verb forms in which agreement is marked with both subject and object. However, they, too, can use the 'earlier' pattern.

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<sup>9</sup> For a description of the history of the Deaf community in Israel and the development of ISL, see Meir & Sandler (in press).

## 7 CONCLUSIONS

Sign languages show that the privileged status of the subject is manifested not only in its behavior in various structural levels, but also in the inherent lexical structure of signs. That is, the notion of subject is built into the structure of the words themselves, even before they combine into larger units. The division of labor between the body and the hands in such signs suggests that we conceptualize an event in terms of a predicate which is predicated over the subject. The subjecthood of one of the arguments participating in the event is a basic component of the lexical structure for expressing the event.

The 'body as subject' pattern, though very basic, as we claim, is often obscured by other systems in sign languages. However, once this pattern is recognized, it becomes a powerful explanatory tool for accounting for a variety of phenomena, both inter-language and intra-language. It explains why this pattern surfaces as a default strategy in single argument agreement verbs, it explains the complexity of 1<sup>st</sup> person object forms, and it accounts for apparent object supremacy in sign language verb agreement system. Diachronic developments within a sign language, as well as typological differences between sign languages also find a natural explanation when the role of the body in the structure of signs is recognized. It might also prove useful in bringing together other phenomena as well, for example the fact that character view-point gestures are more transparent than observer view-point gesture (Marentette et al 2007), and observations regarding stages of acquisition of verb agreement by deaf children in various sign languages. We leave these issues to future research.

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