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Sign Language: Morphology

T Johnston, Macquarie University, Sydney, Australia

Morphology deals with the regular, minimal, meaning-bearing units in language – morphemes – which are words or parts of words. Morphemes can effect changes in meaning by signaling the creation of a new word or a change in word class (derivation), or by signaling grammatical information such as case, number, person, aspect, tense, etc., (inflection) (*see* **Morpheme**).

Individual signs in a signed language are the basic equivalent of words in a spoken language. Each signed language has a vocabulary of conventional lexical signs which are often monomorphemic. In the closely related Australian and British Sign Languages (Auslan and BSL, respectively), for example, none of the formational aspects of the sign SISTER has any separate meaning of its own (*see* **Sign Language: Phonology** and **Sign Languages of the World**). See **Figure 1.**

The type of morphological processes commonly found in signed languages seems to be influenced by the fact that most lexical signs are monosyllabic or, at most, bisyllabic (Johnson and Liddell, 1986; Liddell, 1984; Sandler, 1995; Wilbur, 1993). Signed languages appear to favor simultaneous sign internal modification, rather than the concatenation of morphemes. This may be related to the fact that the larger size of the articulators in signed languages (the hands, arms, face, and body) means that each sign gesture takes more time to execute than each spoken articulatory gesture (Bellugi and Fischer, 1972). If segments are added to a stem, producing a multisyllabic sign, processes of assimilation and deletion tend to restructure the resulting sign into a bisyllabic or monosyllabic one with simultaneously expressed morphemes.

This process is most clearly seen in the formation of new signs through compounding. In Auslan/BSL, for example, the sign CHECK derives from SEE and MAYBE. SEE has lost its outward movement with final hold and has incorporated the anticipated handshape of MAYBE, while MAYBE has lost its repeated twisting movement. The compound has a single syllable (Sutton-Spence and Woll, 1999). See **Figure 2.**

With the exception of prefixes in Israeli Sign Language (Aronoff *et al.*, 2000), the few affixes that have been identified in signed languages are all suffixes. Indeed, many appear to have grammaticized from one of the elements in erstwhile compounds. For example, a negative suffix –NEG can be attached to AGREE to derive the new sign DISAGREE, in Auslan/BSL. The affix appears to be a reduced form of an independent sign, which itself seems related to a gesture (meaning something like 'not know') shared with the hearing culture. A similar suffix (in both form and meaning) has been identified in a number of signed languages (Zeshan, forthcoming). See **Figure 3.**

Researchers have also identified a derivational process whereby stem signs for certain units that are enumerable (e.g., TOMORROW, WEEK) may incorporate

Figure 1 A monomorphemic sign. Reproduced from Johnston T & Schembri A (eds.) (2003). *The survival guide to Auslan: a beginner's pocket dictionary of Australian Sign Language.* Sydney: North Rocks Press with permission.

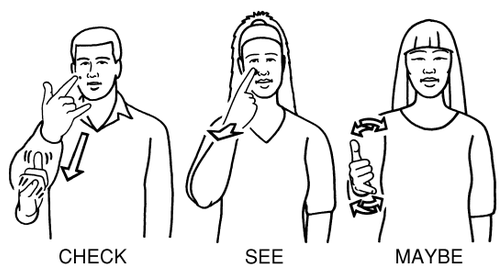

Figure 2 A compound and its components. Reproduced from Johnston T & Schembri A (eds.) (2003). *The survival guide to Auslan: a beginner's pocket dictionary of Australian Sign Language.* Sydney: North Rocks Press with permission.

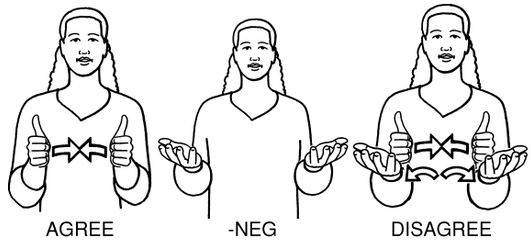

Figure 3 Derivation through negative affixation. Reproduced from Johnston T & Schembri A (eds.) (2003). *The survival guide to Auslan: a beginner's pocket dictionary of Australian Sign Language*. Sydney: North Rocks Press with permission.

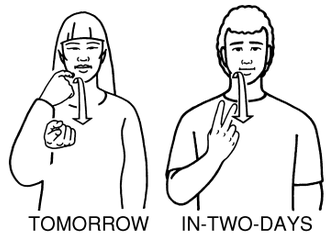

Figure 4 Number incorporation in Auslan/BSL. Reproduced from Johnston T & Schembri A (eds.) (2003). *The survival guide to Auslan: a beginner's pocket dictionary of Australian Sign Language*. Sydney: North Rocks Press with permission.

Figure 5 Derivation through movement modification. Reproduced from Johnston T & Schembri A (eds.) (2003). *The survival guide to Auslan: a beginner's pocket dictionary of Australian Sign Language*. Sydney: North Rocks Press with permission.

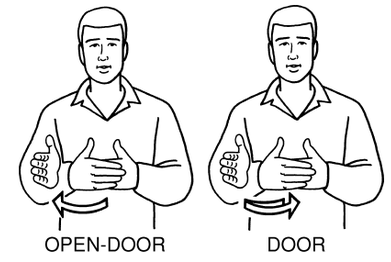

Figure 6 The derivation of a nominal from a verb. Reproduced from Johnston T & Schembri A (eds.) (2003). *The survival guide to Auslan: a beginner's pocket dictionary of Australian Sign Language*. Sydney: North Rocks Press with permission.

numeral handshapes to create specific signs for specific numbers of these units (e.g., IN TWO DAYS, TWO-WEEKS). See **Figure 4.**

Modification of the quality of the movement in a sign can also be used to derive new signs, such as BUSY from WORK (Auslan/BSL). A similar process derives NARROW-MINDED/PRUDISH from CHURCH in ASL, and this has been compared to templated morphology as found in Semitic languages (Fernald and Napoli, 2000). See **Figure 5.**

It is often difficult to clearly distinguish between stem modification or suprasegmental modification in signed languages. In many respects, modifying the movement parameter of a sign is akin to changing a vowel (a stem modification); however, in others, modifying for manner of movement is akin to tone (a suprasegmental modification). The derivation of nouns from verbs in some signed languages is a case in point.

Originally described in ASL (Supalla and Newport, 1978), this morphological process, in which nouns are derived from verbs by a sign-internal modification of movement, also has parallels in other signed languages. The continuous single movement found in the verb is modified to be restrained and tense, and often repeated, in the noun, as in the Auslan/BSL pair DOOR and OPEN-DOOR. See **Figure 6.**

However, typical exemplars in many signed languages overlap considerably in both form and meaning, and the productivity of the derivational process appears influenced by underlying iconicity. Though it is to be expected that derivational paradigms in any language will be restricted and morpheme productivity limited, for some signed languages at least the degree of grammaticization of these modifications is as yet uncertain.

Morphemes and morphological processes can also signal the inflection of existing signs, adding grammatical information (e.g., marking for number, person, aspect, etc.) while maintaining the essential lexical meaning of the stem. Inflections in signed and spoken languages can be found on nominals or predicates (verbs and adjectives).

Inflection by concatenative affixation appears to be extremely rare in signed languages. One example is a nominal genitive suffix in Auslan which is used to signal possessive relationships between two nouns. This sign is not used as a free morpheme of any kind, but only as a suffix, as in MOTHER+GEN SISTER+GEN HUSBAND to mean 'mother's sister's husband.'

Data from a growing number of signed languages have shown that all of them exploit space and movement patterns inherent in sign formation to convey information regularly encoded in the inflectional

Figure 7 Inflection ('person agreement') through movement modification in the Auslan/BSL sign GIVE, and the Auslan sign HELP. Reproduced from Johnston T & Schembri A (eds.) (2003). *The survival guide to Auslan: a beginner's pocket dictionary of Australian Sign Language*. Sydney: North Rocks Press with permission.

systems of spoken languages. Indeed, the markings often appear to be in part phonologically conditioned. For example, space will be exploited when a sign is not anchored throughout its production at a particular location on the body, or if its movement parameter is not specified for repetition.

These processes are exemplified in both nominal and verbal inflections. In nominal signs, inflection for plurality can be marked by repetition (often in different locations if the sign is not anchored). Spatial modifications can also signal topographical information about referents (e.g., a noun may be placed in the signing space to mean 'thing-at-such-and-such-a-place').

A basic tripartite division of ASL verb signs as plain, spatial, and agreeing (Padden, 1988) has been found to apply to signed languages to which the framework has been applied (with or without various modifications and reinterpretations).

For example, no sign language lacks the ability to modify the direction of the movement parameter of agreeing verbs so that the beginning and end points of these signs move between regions in the signing space associated with the *subject* (or the *agent*) and the *object* (or the *patient*) of the action. (Alternative interpretations of this phenomenon include those that assign *source* and *goal* as the underlying significance of these locations (Johnston, 1991; Meier, 1982).) The sign glossed as GIVE in many signed languages can have the meanings 'I give you' when moved from the signer to the interlocutor, or 'you give me' when moved from the interlocutor toward the signer, and 'he/she gives him/her' when moved between two (real or imaginary) third entities in the signing space. In spatial verbs the same mechanism is exploited to mark spatial and locative information. (Plain verbs are unable to exploit location and direction of movement in this way because they have a fixed place of articulation.) See **Figure 7**. For Padden and many linguists, the modifications on agreeing verbs are analyzed as non-concatenative affixes inflecting for person, while for other linguists the modifications indicate locations, depicting actions

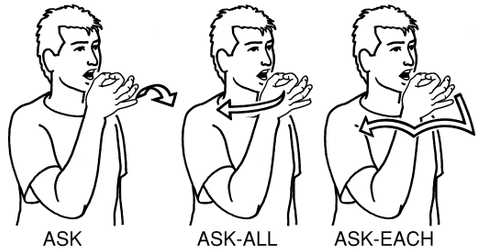

Figure 8 Inflection ('distribution') through movement modification in Auslan/BSL. Reproduced from Johnston T & Schembri A (eds.) (2003). *The survival guide to Auslan: a beginner's pocket dictionary of Australian Sign Language*. Sydney: North Rocks Press with permission.

within a mental space representation of an event (Liddell, 2003).

A second related phenomenon in verb inflection refers to distribution and involves a 'plural sweep' in which the end point is moved in an arc through locations associated with referents or relocated and redirected at each in a series of repetitions, as in the modification of ASK to mean 'ask all' or 'ask each.' See **Figure 8**.

Similarly, modifications can be made to the movement parameter of verb signs to express a number of aspectual nuances. Researchers in many signed languages have identified similar patterns of movement modification, with similar meanings, as first described in ASL (Klima *et al.*, 1979). For example, similar patterns of cyclic and repeated movements also convey durational and continuative aspect (e.g., 'ask repeatedly'). Aspectual and distributional modifications can also combine to create a morphologically complex multilayered pattern of modifications (e.g., 'ask all repeatedly').

Verbal modifications based on suprasegmental modifications involve nonmanual features such as facial expression. A large number of facial expressions have been identified across many signed languages. Two found in Auslan/BSL – 'th' (as if producing an interdental fricative) and 'mm' (a bilabial protrusion) – are examples also found in some

other signed languages. The former implies lack of control or inattention, the latter implies relaxed normality and when co-articulated with DRIVE they mean 'drive carelessly' and 'drive relaxed and normally', respectively.

As with the derivation of nominals, the extent of the grammaticization of movement modifications inflecting for aspect and manner, and their obligatoriness, within many signed languages, is still yet to be determined, or, at minimum, appears to vary.

Though many signs are monomorphemic or bimorphemic, highly iconic lexical signs, of which there are significant numbers in any signed language, often have more than two identifiable morphemes – they are multimorphemic. Take the highly iconic sign DRINK/CUP (as if holding a cup to one's mouth) which is found in many signed languages with a similar form and meaning. It consists of at least three morphemes: The handshape signifies holding a cup, the movement signifies turning a cup toward the mouth, and the location signifies the mouth.

Importantly, there are a significant number of signs produced in many utterances in any signed language which are neither lexical nor grammatical signs. They display a moderate to high degree of conventionality in the form and meaning of handshapes, while movements and locations appear to be draw on particular representational exigencies of the moment. These signs are variously called classifier signs or polymorphemic signs.

Polymorphemic signs are used to convey a large amount of visual spatial information about participants in a situation (e.g., the size and shape and location of entities, how they may be handled, their position in space, and their path and manner of movement). In the following sign, the upright index finger represents a person, the palm the front of the body, the movement left to right the path, and the bobbing up and down movement a walking action. See **Figure 9**.

PERSON-WALK-BY-FROM-RIGHT-TO-LEFT

Figure 9 A complex polymorphemic sign found in many signed languages. Reproduced from Johnston T & Schembri A (eds.) (2003). *The survival guide to Auslan: a beginner's pocket dictionary of Australian Sign Language*. Sydney: North Rocks Press with permission.

No signed language appears to lack these types of signs, and a considerable literature has been generated in an attempt to analyze them systematically in linguistic terms (Emmorey, 2003; Engberg-Pedersen, 1993; McDonald, 1982; Schick, 1990; Supalla, 1986). They can create monosyllabic polymorphemic signs which are unattested in spoken languages and which resist analysis into roots and listable morphemes. They remain a problem area for linguists (Schembri, 2003).

Original research into signed languages aimed to establish them as real languages with language-like characteristics. Subsequent research has aimed to establish the validity of linguistic universals that had been made on the basis of the study of spoken languages only, or to determine the impact of modality on language structure (e.g., Meier *et al.*, 2002).

Another line of research seeks to acknowledge the degree to which signed languages are different from spoken languages. Depending on how the dynamics of spoken language are understood, these differences have been perceived as additional special characteristics peculiar to language in the visual-gestural modality, or as differences of degree only which have been occasioned by modality, e.g., some representational resources, such as space, are universally exploited in signed languages. For some linguists, the exploitation of a spatial and iconic morphology is seen as unique to signed languages but is nonetheless analyzed as part of a fully linguistic system of agreement (Aronoff *et al.*, 2000), for others it represents a fusion of elements of language and gesture (Liddell, 2003). For yet others, these face-to-face representational resources are recognized as available to *all* language users – even if they are underexploited in spoken languages and are ignored in most grammars. They saturate the lexico-grammar of signed languages because they are always available in languages that are embodied and, of necessity, always in view (Johnston, 1992).

It is as yet unclear if all of the phenomena of sign language morphology can be properly dealt with as 'linguistic,' narrowly defined. Insofar as it may contribute to the redefinition of what is 'language' or what is properly 'linguistic,' the short history of the study of signed languages belies its relative importance to linguistics.

See also: Classifiers and Noun Classes: Semantics; Compound; Inflection and Derivation; Morpheme; Morphology; Possession, External; Sign Language: Phonology; Sign Languages of the World.

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Sign Language: Overview

W Sandler, University of Haifa, Haifa, Israel

In many ways, sign languages are like spoken languages: They are natural languages that arise spontaneously wherever there is a community of communicators; they effectively fulfill all the social and mental functions of spoken languages; and they are acquired without instruction by children, given normal exposure and interaction. These characteristics have led many linguists to expect sign languages to be similar to spoken languages in significant ways. However, sign languages are different too: As manual–visual languages, sign languages exploit a completely different physical medium from the vocal–auditory system of spoken languages. These two dramatically different physical modalities are also likely to have an effect on the structure of the languages through which they are transmitted.

It is of special interest, then, to compare natural languages in the two modalities. Where the two systems converge, universal linguistic properties are revealed. Where they diverge, the physical medium of transmission is implicated, and its contribution to the form of language in both modalities is illuminated. Neither can be seen quite so clearly if linguists restrict their study to spoken language alone (or to sign language alone). For this and other related reasons, it is often remarked that sign languages provide