Perspectives on Classifier Constructions in Sign Languages

Edited by

KAREN EMMOREY
The Salk Institute for Biological Studies

LAWRENCE ERLBAUM ASSOCIATES, PUBLISHERS
2003 Mahwah, New Jersey London

Lawrence Erlbaum Associates, Inc., Publishers
10 Industrial Avenue
Mahwah, New Jersey 07430

Cover design by Kathryn Houghtaling Lacey

Library of Congress Cataloging-in-Publication Data

Workshop on Classifier Constructions (2000: La Jolla, San Diego, Calif.)
Perspectives on classifier constructions in sign languages / edited by Karen Emmorey.
p. cm.
"This volume is the culmination of work discussed and presented at the Workshop on Classifier Constructions held in La Jolla, California, in April 2000"—Pref.
Includes bibliographical references and indexes.
ISBN 0-8058-4269-1 (cloth : alk. paper)
1. Sign language—Congresses. 2. Sign language—Classifiers—Congresses.
3. Categorization (Linguistics)—Congresses. I. Emmorey, Karen. II. Title.

HV2474.W66 2003
419—dc21

2002067167

Books published by Lawrence Erlbaum Associates are printed on acid-free paper, and their bindings are chosen for strength and durability.

Printed in the United States of America
10 9 8 7 6 5 4 3 2 1

7

Verbs of Motion and Location in Hong Kong Sign Language: Conflation and Lexicalization

Gladys Tang
Chinese University of Hong Kong

This chapter presents some preliminary results of a research project that investigate the inherent semantic characteristics of the classifier predicates of Hong Kong Sign Language (HKSL). The analysis is based on Talmy's (1985,2000) concept of motion events and how certain fundamental semantic categories of a motion event are incorporated into the predicates of natural language. Talmy argued that a motion event can be analyzed as having four basic semantic categories: *FIGURE, MOTION, PATH, GROUND*. This event is also said to be associated with an external co-event that consists of semantic categories such as *MANNER* and *CAUSE*. Languages display differences in mapping these categories onto the surface constructions. This chapter examines the lexicalization process in verbs of motion and location in HKSL, with particular reference to how the four semantic categories and the co-event *MANNER* are mapped onto these verbs. The paper argues that HKSL can be regarded as a *FIGURE*-type language because *MOTION* and *FIGURE* are consistently conflated in the morphological derivation of the classifier predicate.

STRUCTURE OF A MOTION EVENT

Talmy (1985, 2000) argued that the human mind is endowed with certain cognitive processes that enable us to draw a boundary over a portion of our perception and ascribe to the content within that boundary the property of being a single entity. He calls these processes *conceptual partition* and *ascription of entityhood* respectively. One of these entities can be cognized as a macroevent. The macroevent may be expressed by a single clause and is regularly conceptualized as a unitary event. An example in English is shown in 1:

(1) The rock rolled down the hill. (Taken from Talmy, 1985, p. 63)

However, a closer analysis of this single clause reveals that this macroevent can be treated as an event complex that is decomposable into two subcomponents. First, there is a framing/main event that provides an overall conceptual framework within which certain activities are conceived of as taking place. This framing event, which is said to constitute a particular event schema, also contributes to the argument structure of the event predicate and the semantic characteristics of the arguments within it. The theme argument, 'the rock,' in example (1) is perceived as changing its location from point a to point b in a motion event. Second, the framing event may be substantiated or supported by certain co-events. The co-event for (1) is *MANNER*,[1] which is expressed in the form of 'rolling'. According to Talmy, the framing event can be applied to different conceptual domains. In this chapter, we concentrate on the domain of motion and location in space.[2]

Talmy (2000) defined a motion event as a situation containing movement or the continuation of a stationary location of a figural entity. Motion as an event entity is perceived as having the fundamental property of *dynamism*, which is a principle of activeness in the world and universal in human cognition. A motion event consists of four semantic categories: *FIGURE* (figural entity), *GROUND* (ground entity), *MOTION* (activating process) and *PATH* (association function). This framing event may be supported by co-events such as *MANNER*.[3] According to Talmy (2000), a *FIGURE* is a moving or conceptually movable objects whose path or site is at issue. *MOTION* refers to the presence per se of motion or locatedness in the event, technically reanalyzed as abstract deep verbs *MOVE* or BE_L (i.e., 'be located'). The third component is *PATH*, which is defined as the *path* followed or the *site* occupied by the figural entity with respect to the ground entity. *PATH* is argued to constitute the core schema of the framing event; it has the association function of putting the figural entity into a particular relationship with the ground entity.[4] It signals directed motion or movement along a path. Lastly, *GROUND* refers to a reference frame, or a reference point; it is usually stationary and within which the figure's path or site is characterized. Conceptually speaking, *MOTION* is either translational or self-contained. *Translational motion* depicts a change of location of the figural entity in the time period under consideration. Translational motion reflects the semantic category of *PATH*, the core schema of a motion event. Self-contained motion is usually encoded as *MANNER* in the co-event. Examples of manner of motion are rotation, oscillation, dilation (contraction or expansion), wiggle, local wandering or rest.

According to Talmy, the existence of the macroevent as a cognitive unit with its specific conceptual structure may be universal of linguistic organization. Also, typologically, languages may be divided according to how this conceptual structure maps onto the surface constructions during the process of lexicalization. Hence, the world's languages can be broadly categorized as either verb-framed or satellite-framed languages, depending on whether the core schema of a macroevent is mapped onto the main verb or the satellite. Talmy (1985) defined a *satellite* as any grammatical constituent other than a nominal complement that is in a sister relation to the verb root. English or Cantonese are said to be satellite-framed languages because the core schema *PATH* is expressed not by the main verb but by the satellite to the verb:

(2) English PP: He walked[5] **toward the gate**.

(3) CantoneseV_2: keoi paau **gwo** heoi maai syut-gou sik
Pro run cross go buy ice cream eat
'He ran over there to buy an ice cream (to eat)'.

Where *PATH* is mapped upon the verb, a verb-framed language results. Spanish is an example.

(4) Spanish La botella **salio** de la cueva flotando
The bottle exit from the cave, floating
'The bottle floated out of the cave'. (Taken from Talmy, 1985, p. 69)

In a motion event, *MOTION* (*MOVE* or BE_L) always appears in the verb root and typologically it may be conflated with one of the following categories: *FIGURE*, *PATH* and co-event *MANNER* or other categories. Different languages show different conflation patterns in the process of lexicalization.[6] Based on this property, the world's languages can be categorized according to whether they characteristically place the co-event, the *PATH* or the *FIGURE* on the verb root. Spanish is a *PATH*-type language, English and Cantonese are *MANNER*-type languages, and Atsugewi is a *FIGURE*-type language, as shown in example (5) below:

(5) /'-w-uh-sta'q-ik-ª/ (Taken from Talmy, 1985, p. 74)

In Atsugewi, -sta'q- is translated as 'runny icky material moves or be-located'. In this example, it means literally 'runny icky material is located on the ground from its own weight acting on it'. Note that English, Cantonese, and Atsugewi are categorized as *satellite-framed languages* because *PATH* is not mapped onto the man verb but the satellite to the verb. Typologically, *MOTION+PATH* is the most extensively represented among the world's languages, followed by *MOTION+CO-EVENT* and *MOTION+FIGURE* least so.

PREVIOUS ANALYSIS BASED ON THIS MODEL

Talmy's conceptual model of motion events has been employed in the analysis of verbs of motion and location in American Sign Language (ASL). These are intransitive verbs that involve a theme or an agentive argument as the grammatical subject. In signed language research, these verbs are represented in a form conventionally referred to as *classifier predicates* (Corazza, 1990; Schick, 1990).[7] Following the 'movement as roots' hypothesis proposed by Supalla (1986),[8] Schick (1990) investigated how the handshape morphemes combine with different movement roots in the predication and how this grammatical process reflects transitivity. In her analysis, the 'CLASS' morpheme involves a handshape that represents the *FIGURE*, and this handshape combines with the 'MOV' root, resulting in a 'path' movement in space, meaning an entity moving from point a to point b.

Talmy's approach has been adopted in the analysis of verbs of motion and location in some signed languages. Adopting this model, one needs to determine which semantic category the verb conflates with in the process of lexicalization. In this regard, different claims have been advanced. Supalla (1990) analyzed certain locomotion verbs like RUN, LIMP, and SWIM in ASL and argued that they surface in the form of serial verb constructions. With an English sentence, 'a human limping in a circle' (taken from Supalla, 1990, p. 133), he argued that ASL patterns English and codes *MANNER* in the main verb LIMP with a specific body classifier that allows the conflation of manner of locomotion. *PATH*, the core schema of the motion event, is mapped onto a reduced serial verb (i.e., satellite) that selects an unmarked classifier handshape. Adopting this analysis, he argued that ASL is a satellite-framed language because *PATH* is encoded in the "reduced" second verb of the verb series. In contrast, Slobin and Hoiting (1994) argued that ASL is a verb-framed language, similar to the Sign Language of the Netherlands (SLN). Treating each verb in the series as having the status of a full verb, they argued that *PATH* is still encoded by a

verb, not a satellite. As shown by the sentence in SLN, MAN HOUSE [RUN APPROACH ENTER] 'A man ran into a house'.[9] *MANNER* is encoded both by an independent verb RUN and inflectionally on two path verbs —APPROACH and ENTER—in the verb series. Generally speaking, both accounts adopt the 'movement as root' hypothesis but the difference seems to stem from whether a distinction is made between manner of locomotion and manner of motion along a path. Supalla (1990) argued that manner of locomotion is always mapped onto the locomotion verb that occurs as the first verb of the series and the path verb is not marked for manner of locomotion.[10] On the other hand, Slobin and Hoiting (1994) regarded both manner of locomotion and manner of motion along a path as the subcomponents of *MANNER*. They argued that *MANNER* (i.e., manner of motion along a path) is still inflected on the path verb of the verb series, albeit in a reduced form.

LEXICALIZATION: PROBLEMS AND CONCERNS

In order to analyze the lexicalization patterns of verbs of motion and location in signed language, one needs to tackle two fundamental issues. They are to do with the linguistic status of handshape as classifier, a category borrowed from the spoken language literature, and what constitutes the verb root of a classifier predicate.

There has been a controversy regarding drawing a parallel between the handshape in the so-called 'classifier predicates' in signed language with the spoken language classifiers. If one takes the definition that classifiers are separate morphemes that combine with the noun or the verb, the Athabaskan languages like Navajo or Koyukon with which signed language classifiers are often associated do not display this kind of morphological property. These spoken languages contain just suppletive classificatory verbs similar to the Atsugewi example illustrated above. In other words, these languages do not have a separate classifier morpheme as such. In contrast, the handshape of classifier predicates has its own distinctive properties. First, it is considered as a distinct but bound morpheme. Second, Engberg-Pedersen (1993) pointed out that the handshape seems to reflect more than just noun classification. The general finding that a human entity is associated with a number of handshapes indicates that the handshape reflects not only the inherent semantic characteristics of humanness; certain constraints seem to be at work in the choice of a handshape for semantic representation. In the following analysis, we show that these constraints may be related to specific aspects of human involvement in a motion event.

The second issue is more difficult to resolve: it is concerned with what counts as the verb root of a classifier predicate. This issue has been subject to debate recently and different positions have been advanced: (a) movement as root (Supalla, 1986, 1990; Schick, 1990; Liddell & Johnson, 1987) and (b) handshape as root (McDonald, 1982; Engberg-Pedersen, 1993). Supalla (1982) argued that the handshape is regarded as a bound morpheme that combines with the movement root during the process of morphological derivation. Engberg-Pedersen argued against the adequacy of associating handshapes with the spoken language classifiers or treating one component of the classifier predicate as more basic than the other. According to her, both components are mutually interdependent in generating the predicative meaning. Schembri (chap. 1, this volume) also argued on semantic and morphosyntactic grounds that the handshape of a classifier predicate displays distinct properties that are not strictly comparable to a spoken language classifier.

It appears that it is the modality in which signed language operates that leads to the difficulty in analyzing the morphosyntactic structure of classifier predicates. Talmy's analysis is largely

one based on spoken languages, and the lexicalization patterns are analyzed with the assumption that semantic categories like *FIGURE* or *PATH* can be mapped onto the grammatical constituents in a sequential order. In signed language, the two fundamental components—handshape and movement—are presented more or less simultaneously rather than sequentially. However, we argue that simultaneity in surface representation should not lure us into thinking that these two components cannot be analyzed independently. It is reasonable to assume that the four semantic categories suggested by Talmy are primitives that underlie the conceptual structure of motion events. The question is whether differences exist in the lexicalization patterns between signed and spoken languages.

LEXICALIZATION IN VERBS OF MOTION AND LOCATION: A PROPOSAL

In this chapter, we attempt to tackle this problem from a cognitive semantic perspective. We assume that movement is the verb root and fundamental to a systematic account of verbs of motion and location in signed language. A *predicate* by definition denotes a state, an event, or a process. In a predicate, it is the verb that selects the arguments and assigns the appropriate semantic and syntactic properties to them (Williams, 1994). For an event that involves causation, the verb selects an agent as its external argument and an affected patient as its internal argument. For a motion event, the verb selects a single external argument as the grammatical subject. Adopting this assumption in the analysis of verbs of motion and location in signed language, the movement of the manual articulator is crucial, for it provides important information about some fundamental qualitative domains of predication such as event and action, state or location.

Following Talmy's analysis, the conceptual structure of a motion event in signed language may consist of two separate components: the *FIGURE* component and the *GROUND* component (see Diagram 1 below). The *FIGURE* and *GROUND* components are usually realized by the dominant and nondominant hand respectively. If the *GROUND* component is present, it may represent an independent conceptual component of the motion event as a consequence of the argument structure invoked by the verb. In a motion event, the argument for *GROUND* may assume the semantic role of location, source or goal.

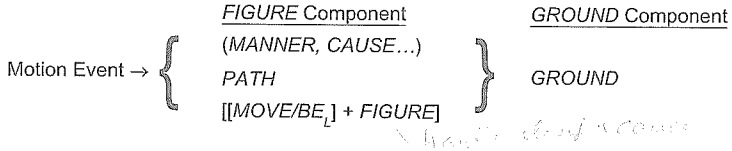


Diagram 1. Conceptual structure of a motion event in signed language

In the *FIGURE* component, *MOTION* expressed in the form of $MOVE/BE_L$[11] forms the basic level of the lexicalization process. It is regarded as an abstract deep morpheme according to Talmy's analysis. For verbs of motion and location, *MOTION* is realized phonetically through movement of the dominant hand. Those verbs that encompass an underlying *MOVE* encode a displacement of an entity through space. Verbs with BE_L indicate the existence or location of an entity in space. In verbs of motion and location, the movement that encodes either *MOVE* or BE_L

consistently combines with the handshape unit of the predicate. The handshape unit typically encodes *FIGURE* of the motion event structure.

Once [[*MOVE/BE*$_L$] + *FIGURE*] forms the first abstract tier of the predicate, other semantic categories like *PATH* and/or *MANNER* may be added to this tier. While *MANNER* or other co-events are optional, *PATH* is obligatory because it represents the core schema of a motion event structure. [*BE*$_L$ + *FIGURE*] combines with *PATH*$_S$ (site) and surfaces as verbs of existence/location. It may further combine with *MANNER* to denote spatial configuration. [*MOVE* + *FIGURE*] combines with *PATH*$_P$ (path) and surfaces as verbs of translational motion. This is motion in which the location of the *FIGURE* changes during the process. It may combine further with *MANNER* to denote manner of motion along a path.

This proposal assumes that [*MOVE/BE*$_L$] is a deep morpheme and [[*MOVE/BE*$_L$] + *FIGURE*] is a midlevel constituent. Note that these deep or midlevel morphemes are conceptual units that reflect the semantic organization of natural language. They do not have a corresponding overt morpheme at the morphosyntactic level. However, they select a verb from the lexicon that represents the motion event structure in overt syntax. Depending on the perceived motion event, verbs like 'go', 'cross' or 'pass' in English are assumed to have an underlying abstract morpheme MOVE in the semantic representation. Talmy (2000) also suggested the possibility of certain abstract intermediate morphemes for a conceptual complex that consists of a deep morphemic concept together with additional semantic materials. Seen in this light, signed language should be a kind of figure-type language because *MOTION* is consistently conflated with *FIGURE* to form a verb stem in the classifier predicate. This explains why the predicative meaning is always a function of the interaction between *MOTION* and *FIGURE*. This interaction is expressed in terms of the co-occurrence restrictions between *MOTION* and *FIGURE*. These restrictions are partly semantic because the choice of handshape is dependent in part on the noun category of the referent. At the same time, the choice may reflect the specific aspects of the motion event on which the signer wishes to focus.

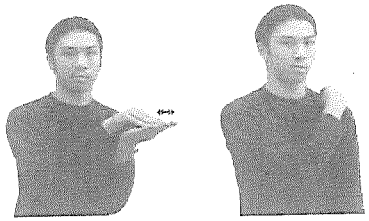
MOTION EVENTS IN HKSL

Some General Observations

In the analysis that follows, we examine the lexicalization patterns of the semantic categories in verbs of motion and location in HKSL. We restrict our analysis to the motion events that incorporate the co-event *MANNER*.

There has not been any official documentation on the origin of HKSL. From the sources provided by the deaf associations, HKSL is said to be historically related to a variety of Chinese Sign Language based in Shanghai. Woodward (1993) reported that HKSL and Shanghai Sign Language share 77% of the cognates in common. In the current project, the data were collected from three native deaf signers of HKSL through a picture elicitation task. They were shown a series of pictures and were told to describe them as accurately as possible. All the tokens were videotaped and transcribed with the help of a deaf research assistant.

Generally speaking, the *FIGURE* and *GROUND* of a motion event in HKSL are usually encoded by a set of classificatory handshapes. When the signer himself assumes the *GROUND* component, the body of the signer or part thereof becomes the locus or the reference frame with respect to which a *FIGURE*'s *MOTION* is characterized, as shown in example (6) below:



MOUSE CL-predicate

FIG. 7.1. A mouse lies on my shoulder.

(6) MOUSE CL: AN_ENTITY_WITH_A_BODY_LONGER_THAN_IT_IS_WIDE_LIE_FACE_DOWN_ON_MY_SHOULDER
FIGURE{[*BE*$_L$ + *FIGURE*$_i$] + *PATH*$_S$+*MANNER*} *GROUND*[12]

'A mouse lies on my shoulder.' (see Fig.7.1)

In example (6), the abstract verb *BE*$_L$ combines first with *FIGURE*. In HKSL, the B-handshape with the thumb in contact with the pad of the fingers is used to refer to mice or entities with a curved back (see Fig. 7.1 for the handshape configuration). The complex then surfaces in a movement denoting an underlying *PATH*$_S$ component. In HKSL, this involves a downward movement of the manual articulator that ends in a hold, which is equivalent to the contact root as discussed in the ASL literature. It encodes a stative predicate of existence/location of an entity in space. This realization is supported by a co-event *MANNER* realized by a downward palm orientation in the movement process. The sequence may also be translated as 'A mouse is located on my shoulder, lying face down'. This analysis shows that it is not movement per se, but movement together with a handshape in a specific orientation of the palm that bring about the meaning of 'lie', which is a verb of spatial configuration.

Also, *GROUND* usually occurs before *FIGURE* in a motion event, in line with the observation in Schick (1990) and Supalla (1990) that there is a tendency for *GROUND* to occur right after the antecedent, as shown in example (7):

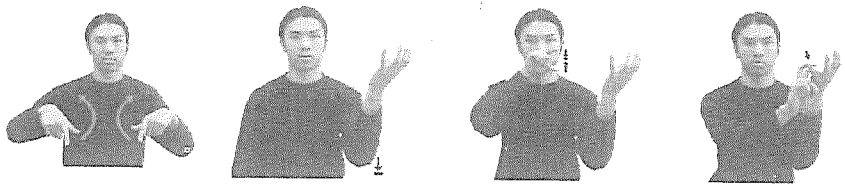
(7) TREE CL: A_VERTICAL_OBJECT_WITH_EXTENSIONS_ON_TOP_BE-LOCATED-AT,
FIGURE {[*BE*$_L$ + *FIGURE*$_i$] + *PATH*$_S$}→ *GROUND*$_i$

'A tree is located here'.

BIRD CL: A_LEGGED_ENTITY_STAND_BY_CLUTCHING_BRANCH_OF_TREE_WITH_CLAWS
FIGURE {[*BE*$_L$ + *FIGURE*$_j$] + *PATH*$_S$+ *MANNER*} *GROUND*$_i$

'A bird perches on the tree'. (Fig. 7.2)

In HKSL, the classifier for trees is the signer's forearm with a bent 5-handshape (see Fig. 7.2). Similar to ASL, the locative-existential predicate is realized by a downward movement ending in a hold in space. Note that the tree as a figural entity becomes the ground entity in a subsequent



TREE CL: predicate BIRD CL-predicate

FIG. 7.2. A bird perches on the tree.

discourse, to serve as a reference point for the following figural entity to establish a relation with. It seems that in this kind of predicate construction, information about the location or the reference point with respect to which the *FIGURE* acts upon is foregrounded first and subsequently shifted to the background when the *FIGURE* is introduced into the discourse. Note that the verb 'perch' implies standing by clutching the branch of a tree with the claws of an entity. This requires a handshape that refers to an animate and legged entity. In HKSL, this quality in predication is realized by a V-handshape.

Nevertheless, it is not obligatory that *GROUND* precedes *FIGURE*. Variation was observed within and between the signers. Such variation may be explained by discourse factors to be discussed below.

BE_L - Predicates

[BE_L + FIGURE] and MANNER

Whole Entity. The motion events as represented by the BE_L predicates typically consist of a main event of existence/location and a co-event of manner. Verbs in HKSL that fall into this category such as STAND, LEAN, LIE, and SIT are conventionally called *posture verbs*. As suggested by Levin (1993), they are verbs of existence that specify the spatial configuration of an entity with respect to some location. BE_L as an abstract verb would surface as a downward movement morpheme that encodes the existence and location of the figural entity in space. *GROUND* is expressed through the nondominant hand and it refers to either animate or inanimate entities.

MANNER as a co-event in HKSL is represented by a specific palm and/or finger orientation that occurs simultaneously with the downward movement. In the data, the Y-handshape generally refers to an animate whole entity. In the human category, the sign STAND is represented by a vertical Y-handshape with a contralateral palm orientation (Fig. 7.3). This is taken to be the unmarked form to refer to a human whole entity. The hand configuration of SIT is almost the same except that the pinky finger is pointing out instead of pointing down.[13] LIE requires the palm to orient downward, and it generally means TO_ LIE_ ON_ ONE'S_ SIDE (Fig. 7.4). This configuration is considered as a citation form for LIE in HKSL. Specific lying postures again are depicted by palm orientation. TO_ LIE_ ON_ ONE'S_ BACK requires the palm to face outward and the selected fingers upward (Fig. 7.5). TO_ LIE_ ON_ ONE'S_ STOMACH (Fig. 7.6) requires the palm to face inward and the selected fingers downward. Another example is LEAN. The sign articulation implies a posture which involves standing but with the upper part of the body leaning against an object, as shown in example (8):

(8) TREE CL: A_VERTICAL_OBJECT_ WITH_EXTENSIONS_ON_TOP_ BE- LOCATED-AT,
$FIGURE\ \{[BE_L + FIGURE_i] + PATH_S\} \rightarrow GROUND_i$

'A tree is located here'.

MALE CL: A_ HUMAN_ WHOLE_ ENTITY_ LEAN_ AGAINST_ A_ VERTICAL_OBJECT_WITH_ EXTENSIONS_ ON_ TOP
$FIGURE\ \{[BE_L + FIGURE_i] + PATH_S + MANNER\}\ GROUND_i$

'A man leans against the tree'. (Fig. 7.7)

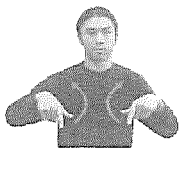
The Y-handshape is also associated with other animate entities such as birds or animals, but it differs from the human Y-handshape by palm orientation. Legged animals represented by the Y-handshape usually select a downward palm orientation due to our perception that the spatial configuration of animals is usually longer than it is wide. In sum, all the animate examples above combine BE_L with the same handshape and it is the palm and finger orientation that differentiates the noun category and manner of existence. The findings are in line with Engberg-Pedersen's (1993) suggestion that the verb stem in Danish Sign Language entails two semantic components: a classificatory handshape that "ascribes an argument of the verb to a certain noun class, and a predica-

FIG. 7.3. STAND.

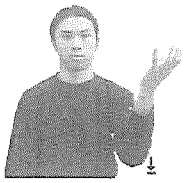
FIG. 7.4. LIE_ON_ ONE'S_ SIDE.

FIG. 7.5. LIE_ON_ ONE'S_ BACK

FIG. 7.6. LIE_ON_ ONE'S_ STOMACH



TREE



CL: predicate

MALE

CL-predicate

FIG. 7.7. A man leans against the tree.

tive component which predicates something of the classified object" (Engberg-Pedersen, 1993, p. 240). The predicative meaning of the verb stem is a function of the interaction between the handshape unit with a specific palm and finger orientation and the movement unit.

Legged Entity. While STAND and LIE obligatorily select a Y-handshape, other posture verbs that obligatorily select a V-handshape are KNEEL (Fig. 7.8), SQUAT (Fig. 7.9), and STAND_ON_ONE'S_LEG (Fig. 7.10). The V-handshape typically refers to a legged animate entity as argument in the predication. All these verbs select a V-handshape but they differ in the configuration and orientation of the selected fingers. In fact, in these cases the choice of handshape appears to be semantically motivated because these verbs entail the spatial configuration of the entity in the event, as in example (9):

(9) BOX MALE CL: A_LEGGED_ANIMATE_ENTITY_SQUAT_ON_A_FLAT_SURFACE
GROUND FIGURE {[BE$_L$ + FIGURE$_i$]+ PATH$_S$+MANNER} GROUND$_j$

'A man squats on the box'. (Fig. 7.9)

FIG. 7.8. KNEEL.

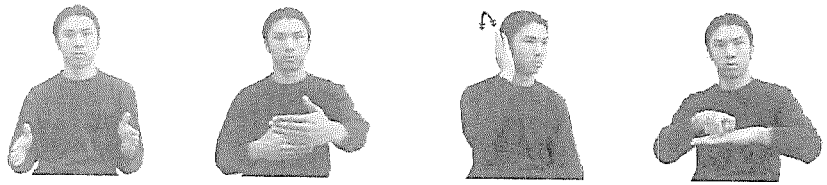


FIG. 7.9. A man squats on the box.

FIG. 7.10. STAND_ON_ONE'S_LEG.

Example (9) shows that SQUAT requires the selected fingers of the V-handshape to face outward and the palm downward, but the palm is facing inward for KNEEL (Fig. 7.8).

In addition, we encounter verbs like SIT or HANG_UPSIDE_DOWN that may vary between a Y-handshape and a V-handshape. Such a variation appears to be a function of a shift in the signer's perspective. Instead of a whole entity, the signer shifts his perspective to the involvement of the legs of the entity in the fulfillment of the event. Therefore, with these verbs, the choice between the Y-handshape and V-handshape is subject to discourse factors such as the signer's perspective.

Complex MANNER in BE$_L$ Predicates

The data from HKSL also reveal that not all signs that encode *MANNER* are incorporated into the verb stem. Signs created by imitating the real world spatial configuration of the entity are not incorporated into the classifier predicate. Events like 'A dog stands on its hind legs' involve a sign that imitates a specific standing posture of the dog. We will call this an 'imit-sign'. This sign is followed by another sign that involves a classifier predicate, as shown in (10):

(10) MALE CL: A_HUMAN_ENTITY_BE-LOCATED-AT,
FIGURE {[BE$_L$ + FIGURE$_i$] +PATH$_S$}→GROUND$_i$

'A man is located here'.

DOG STAND_ON_HIND_LEGS CL: AN_ANIMATE_ENTITIY_STAND_IN_FRONT_OF_AN_ANIMATE_ENTITY
FIGURE MANNER {[BE$_L$ + FIGURE$_j$]+PATH$_S$+ MANNER} GROUND$_i$

'A dog stands on its hind legs in front of the man'. (Fig. 7.11)

As shown in example (10), the semantic category of *MANNER* is complex and decomposable into (a) ON_ONE'S_HIND_LEGS, and (b) STAND. As mentioned, STAND is represented by a Y-handshape that denotes *MANNER* of existence. Preceded by an 'imit-sign' that describes the manner of 'standing on one's hind legs', the legged property as one would expect to observe in the classificatory handshape of the predicate is no longer obligatory. This results in the adoption of a whole entity handshape for the figural entity (i.e., the dog) that 'stands' face to face with another whole entity that serves as *GROUND* (i.e., the man). Using an upright Y-handshape to re-

FIG. 7.11. A dog stands on its hind legs in front of the man.

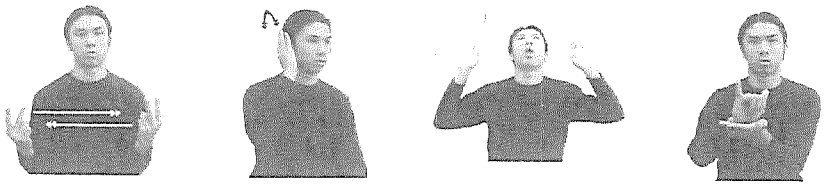


FIG. 7.12. A man lies on his back on the grass.

fer to the animal category is a relatively marked representation, probably due to the requirement of encoding a specific manner of existence of the animal entity.

Another posture verb that reveals a similar property is LIE, expressions like 'lying on one's back' or 'lying on one's stomach' may be encoded by a sign that imitates the different lying postures, as shown in example (11) and Fig. 7.12:

(11) GRASS MALE LIE_ON_ONE'S_BACK CL: A_HUMAN_ ENTITY_ LIE_ON_ HIS_ BACK_ ON_ A_FLAT_ SURFACE
GROUND FIGURE MANNER $\{[BE_L + FIGURE_i] + PATH_S + MANNER\}$ $GROUND_j$

'A man lies on his back on the grass'. (Fig. 7.12)

This example demonstrates that *MANNER* may be encoded through imitating the real world activity of the entity in HKSL. The data below shows that palm orientation is crucial since it determines to some extent the occurrence of the 'imit-sign' in the sentence:

(12a) GRASS MALE CL: A_HUMAN_ENTITY_LIE_ON_HIS_BACK_ON_A_FLAT_SURFACE
(12b) GRASS MALE LIE_ON_ONE'S_BACK CL: A_ HUMAN_ ENTITY_ LIE_ ON_ HIS_ SIDE_ ON_ A_ FLAT_ SURFACE
(12c) GRASS MALE LIE_ON_ONE'S_BACK CL: A_HUMAN_ ENTITY_ LIE_ON_ HIS_ BACK_ON_ A_ FLAT_ SURFACE

'A man lies on his back on the grass. (Fig. 7.12)

In example (12a), the 'imit-sign' is optional if the palm orientation already encodes this specific spatial configuration of LIE (see Fig. 7.5 for LIE_ON_ONE'S_BACK). This sign is necessary in example (12b) because the unmarked form of LIE is used in the predicate (see Fig. 7.4 for LIE_ON_ONE'S_SIDE). In example (12c), it may occur even when the specific palm orientation is adopted. In this case, it is highly likely that the inclusion of the 'imit-sign' is a matter of emphasis. Further elicitation of this manner sign in terms of its distribution shows that it occurs quite freely in the sign sentence, as shown in example (13) below:

(13a) MALE GRASS LIE_ON_ONE'S_BACK CL: A_ HUMAN_ ENTITY_ LIE_ ON_ HIS_ BACK_ ON_ A_ FLAT_ SURFACE

(13b) MALE LIE_ON_ONE'S_BACK GRASS CL: A_ HUMAN_ ENTITY_ LIE_ ON_ HIS_ BACK_ ON_ A_ FLAT_ SURFACE
(13c) *GRASS LIE_ON_ONE'S_BACK MALE CL: A_ HUMAN_ ENTITY_ LIE_ ON_ HIS_ BACK_ ON_ A_ FLAT_ SURFACE
(13d) GRASS MALE CL: A_HUMAN_ENTITY_LIE_ON_HIS_BACK_ON_A_FLAT_SURFACE LIE_ ON_ ONE'S_ BACK
(13e) GRASS MALE LIE_ ON_ ONE'S_ BACK CL: A_ HUMAN_ ENTITY_ LIE_ ON_ HIS_ BACK_ ON_ A_ FLAT_ SURFACE
(13f) ?MALE CL: A_HUMAN_ENTITY_LIE_ON_HIS_BACK_ON_A_FLAT_SURFACE GRASS LIE_ON_ONE'S_BACK

The sentences listed under example (13) show that the 'imit-sign' always follows but seldom precedes the *FIGURE*, and it may precede or follow the predicate. Such evidence shows that this sign does not form part of the verb series in HKSL based on three accounts. First, it is optional if the palm orientation of the Y-handshape already specifies the posture appropriately. Second, its distribution is relatively free, as it may either precede or follow the predicate. Third, the series may be interrupted by other elements such as *GROUND*, as in example (13b) above. Therefore, these 'imit-signs' may be regarded as manner adjuncts and are not necessarily part of the verb series.

To conclude this section, given Talmy's conceptual model that *PATH* may refer to the site occupied by *FIGURE*, it follows that, in HKSL, the core schema of BE_L predicates is 'site' (i.e., $PATH_S$) rather than 'path' (i.e., $PATH_P$) of the figural entity. This core schema, $PATH_S$, is mapped onto the midlevel verb stem represented semantically as $[BE_L + FIGURE]$. Phoenetically, it is realized through a specific downward movement whose end point identifies a site (i.e., locus in space). The data above shows that $[BE_L + FIGURE]$ can further combine with the co-event *MANNER* to encode manner of existence/location. *MANNER* in BE_L predicates is mainly expressed by hand/finger orientation while movement is held constant. Note that this form of movement does not entail motion or $PATH_P$ and shows no displacement of *FIGURE* in space. Engberg-Pedersen (1993) argued that in no way should this movement morpheme in the predicate be interpreted as "move a short way and stop" (Engberg-Pedersen, 1993, p. 256).

MOVE Predicates

This category of motion verbs is similar to BE_L in terms of event strcture. There is a general tendency for *GROUND* to precede *FIGURE*. However, it is also possible for *FIGURE* to precede *GROUND*, particularly when the figural entity is human and the agent of self-initiated motion and the ground entity is an inanimate entity.[14]

[MOVE + FIGURE] and $PATH_P$. For a main event that involves *[MOVE + FIGURE]* with $PATH_P$, HKSL exhibits a range of verbs that combines any one of the three movement types.[15] Below are just some examples:

a. Linear: ENTER, EXIT (inanimate), PASS, PASS-THROUGH, ASCEND, DESCEND, PART, RETURN, CROSS
b. Arc: EXIT (animate), ALIGHT_A_VEHICLE, GET_ON_A_VEHICLE, ARRIVE
c. Circle: MOVE_CONTINUOUSLY, MOVE_ TO_ AND_ FRO, MOVE_ IN_ A_ CIRCLE, MOVE_AROUND_AN_OBJECT

$PATH_P$ refers to the route of movement, which may be linear, arc or circular. The route represents the movement of an entity from one location to another in space. A linear movement generally denotes the moving of an entity on a flat surface or through a medium. It may also suggest the crossing of a boundary by a figural entity, as shown in examples (14a) and (14b). On some occasions, the arc movement may denote the crossing of a boundary such as 'a human entity boards or alights a vehicle' or 'a human entity exits an enclosure' (example [14c]). This monosyllabic movement also entails a telic motion event. A circular movement either outlines the actual route of movement of the figural entity or it may denote the imperfective or atelic aspect of the event, as shown in example (14d):

(14a) MALE HOUSE CL:A_ HUMAN_ENTITY_ENTER_ AN_ ENCLOSURE
FIGURE GROUND $\{[[MOVE + FIGURE_i] + PATH_P\}\ GROUND_j$

'A man enters a house'. (Fig. 7.13)

(14b) TRAIN CL:A_ VEHICLE _ EXIT _ AN_ OBLONG_ OBJECT_ IN_ HORIZONTAL_ POSITION
FIGURE $\{[MOVE + FIGURE_i] + PATH_P\}\ GROUND_j$

'A train exits a tunnel'. (Fig. 7.14)

(14c) MALE HOUSE CL:A_ HUMAN_ENTITY_EXIT_ AN_ ENCLOSURE
FIGURE GROUND $\{[MOVE + FIGURE_i] + PATH_P\}\ GROUND_j$

'A man exits a house'. (Fig. 7.15)

(14d) MALE HOUSE CL:A_ HUMAN_ENTITY_ MOVE_ TO_ AND_ FRO_ IN_ AN_ ENCLOSURE
FIGURE GROUND $\{[MOVE + FIGURE_i] + PATH_P\}\ GROUND_j$

'A man walks to and fro inside a house'. (Fig. 7.16)

In examples (14a), (14c), and (14d), the path verbs select a Y-handshape which denotes a human whole entity. As discussed previously, this handshape in a vertical orientation is regarded as the unmarked form and it usually combines with path verbs. This finding also support Supalla's (1990) observation that, with everything being equal, there is a tendency for the signer to select an unmarked classificatory handshape for path verbs.

FIG. 7.13. A man enters a house.

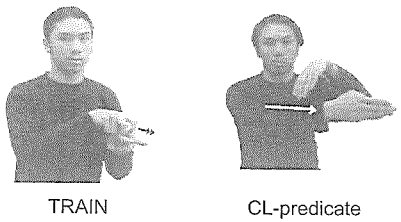


FIG. 7.14. A train exits a tunnel.

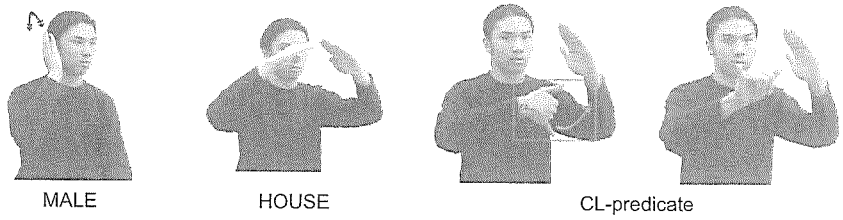


FIG. 7.15. A man exits a house.

FIG. 7.16. A man walks to and fro inside a house.

Note that the data gives only partial support to Slobin and Hoiting's (1994) argument that crossing a boundary requires an arc movement. In HKSL, depending on the verb, crossing a boundary may involve either a linear or an arc movement. Also, animacy seems to determine the type of movement for some of these path verbs. It seems that inanimate objects such as vehicles or animals never select an arc movement to represent the crossing of a boundary (14b). Human entities select the arc movement, only on the occasion that the entity exits an enclosure.

[MOVE + FIGURE] and *MANNER*

Self-Contained MOTION. This particular category of verbs encodes the co-event of *MANNER* of motion at a location. Therefore, in terms of the semantic representation of the mo-

FIG. 7.17. A man trembles on the floor.

tion event, the core schema is $PATH_S$ rather than $PATH_P$. This type of manner of motion at a location is local or self-contained motion. Examples of verbs that fall into this category are TREMBLE, FLOAT, and WIGGLE.

(15) INDEX$_{FLOOR}$ MALE CL:A_HUMAN_ ENTITY_ LIE_ ON_ HIS_ BACK_ ON_ A_ FLAT_ SURFACE_ AND_ TREMBLE
GROUND FIGURE {[MOVE + FIGURE$_i$]+ PATH$_S$+MANNER} GROUND$_j$

'A man trembles on the floor'. (Fig. 7.17)

The verb TREMBLE in example (15) selects a Y-handshape that refers to a human whole entity. Due to $PATH_S$, the handshape with its orientation suggests a specific spatial configuration characteristic of the verb LIE_ON_ONE'S_BACK. Stationing the figual entity represented by the Y-handshape on the palm of the non-dominant 5-handshape reflects $PATH_S$. This ground entity is encoded by the size and shape specifier which denotes a flat, two-dimensional object. Self-contained motion is represented through trilled movement, that is, twisting the wrist of the dominant hand repeatedly. In this example, there is no translation motion of the figural entity from one location to another.

Manner of Motion Along a Path. Supalla (1990) identified two types of manner in verbs of motion in ASL: manner of locomotion and manner of motion along a path. According to him, for verb series that contain a locomotion verb and a path verb, the locomotion verb depicts movement of the limbs and selects certain marked body classifiers that refer to the hands or feet. These classifiers permit the manner of locomotion to be represented by a specific movement pattern of these body parts. Examples in ASL are RUN and SWIM. On the other hand, manner of motion along a path does not involve body classifiers but relatively unmarked handshapes like the Gd-handshape. According to Supalla, manner of motion along a path may be mapped onto the path verb.

In HKSL, the classificatory handshapes that are used to denote the manner of motion along a path for animate entities are the Y-handshape and V-handshape. Examples of verbs that encode the manner of motion along a path by means of a Y-handshape are ROLL, FLOAT, and FLY. Note that palm orientation is crucial for determining (a) whether the motion involves a human entity, and (b) posture. As discussed in the section beginning on page 148 (*BE$_L$— Predicates*),

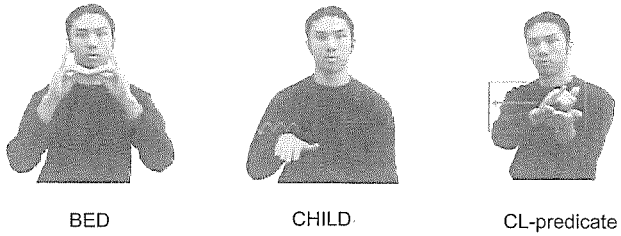


FIG. 7.18. A child rolls across a bed.

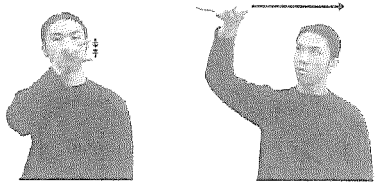


FIG. 7.19. A bird flew across the sky.

animate entities, human and nonhuman, may be denoted by the same Y-handshape. What they differ is palm orientation, as shown in examples (16a) and (16b):

(16a) BED CHILD CL:A_HUMAN_ENTITY_ROLL_ACROSS_A_FLAT_SURFACE
GROUND FIGURE {[MOVE + FIGURE$_i$]+ PATH$_P$+MANNER} GROUND$_j$

'A child rolls across a bed'. (Fig. 7.18)

(16b) BIRD INDEX$_{SKY}$ CL: AN_ ANIMATE_ ENTITY_ IN_ HORIZONTAL_ POSITION_ MOVE_ IN_ A_ LINEAR_ PATH
FIGURE GROUND {[MOVE + FIGURE$_i$]+ PATH$_P$+MANNER} (GROUND$_j$)

'A bird flies across the sky'. (Fig. 7.19)

The Y-handshape of examples (16a) and (16b) differ in palm orientation as a result of posture differences and human/animal distinction. Given the fact that the Y-handshape with a vertical palm orientation is the unmarked form for a human entity, an orientation that deviates from this default representation leads to two interpretations. The first interpretation is that the handshape with a different orientation may denote a specific posture such as 'lie' and 'squat'. The second interpretation is that it refers to a different noun category; that is, the Y-handshape with a downward palm orientation could well refer to animals due to the spatial configuration of the animal category in the real world. Therefore, in example (16b), the Y-handshape refers to a bird in the

real world discourse because the palm is facing down, and such an orientation denotes an entity longer than it is wide and with its back facing the sky.[16] In example (16a), the outward palm orientation suggests a lying posture of an animate entity, and human in this case. The manner of self-contained motion is expressed through a repeated local movement; precisely, it involves repeated twisting of the wrist of the dominant hand while it travels along a linear path on a flat surface (see Fig. 7.18).

Examples of verbs in HKSL that allow a V-handshape are WALK, SWIM, and LIMP. Building on the core schema $PATH_P$, the manner of motion is encoded by trilled movement; that is, the wiggling of the selected fingers (WALK or SWIM) or by swaying the selected fingers in space (LIMP). Another example is JUMP_WITH_TWO_LEGS, which involves a repeated up and down movement of the V-handshape along a path movement.

Manner of Locomotion. Similar to the ASL and the SLN data, manner of locomotion is mapped onto the first verb of the verb series followed by a path verb in the form of a classifier predicate. This observation also confirms Slobin and Hoiting's (1994) suggestion that universally concepts are represented in a clause in the sequence of MANNER-DIRECTION-GOAL. In HKSL, manner of locomotion is typically coded as the first verb of the verb series.

(17) CHILD HOUSE RUN CL: A_HUMAN_WHOLE_ENTITY_ENTERS_AN _ENCLOSURE
FIGURE GROUND MANNER {[MOVE + FIGURE$_j$]+ PATH$_P$} GROUND$_j$

'A child runs into a house'. (Fig. 7.20)

Examples of locomotion verbs that display manner of locomotion are RUN, MARCH, FLY, POUNCE_ON. According to Supalla (1990), in ASL, locomotion verbs are followed by path verbs the handshapes of which are relatively unmarked. Moreover, the locomotion verb and the path verb in the predicate constitute an uninterrupted sequence, similar to the sequence of the serial verb constructions in spoken languages like Chinese and Thai. Lastly, the second verb of the verb series is not combined with MANNER, but with PATH. In HKSL, while locomotion verbs precede path verbs, discrepancies are observed with regard to the continuity of the verb series and the manner of motion along a path in path verbs.

In HKSL, it is possible to insert the ground entity between the locomotion verb and the remaining part of the predicate, as shown in (18a) below. Note that reversing the order of the locomotion verb and the path verb is consistently rejected by all informants (example [18b]). A sequence as such would violate the universal order of semantic representation.

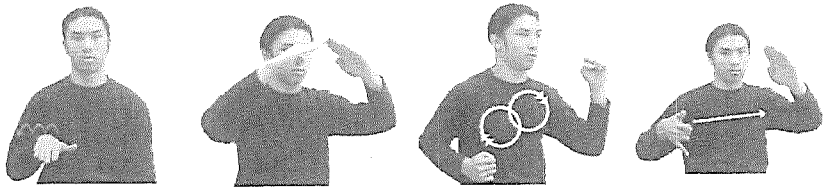


FIG. 7.20. A child runs into a house.

(18a) CHILD RUN HOUSE CL: A_HOUSE_BE_LOCATED CL: A_HUMAN_WHOLE_ENTITY_ENTER_AN _ENCLOSURE
FIGURE MANNER GROUND {[BE$_L$ + FIGURE$_j$]+PATH$_0$}→GROUND$_j$ [MOVE + FIGURE$_j$]+PATH$_P$} GROUND$_j$

'A child runs into the house'.

(18b) *CHILD HOUSE CL: A_HOUSE_BE_LOCATED CL: A_HUMAN_WHOLE_ENTITY_ENTER_AN _ENCLOSURE RUN
FIGURE GROUND {[BE$_L$ + FIGURE$_j$]+PATH$_S$}→GROUND$_j$ {[MOVE + FIGURE$_j$]+ PATH$_P$} GROUND$_j$ MANNER

'A child runs into the house'.

The second discrepancy has to do with the conflation pattern of manner of locomotion and manner of motion along a path in the verb series. Similar to ASL or SLN, the first verb is encoded with manner of locomotion. However, whether manner of motion along a path is coded in the following path verb depends on which classificatory handshape is adopted. In example (18a), a Y-handshape is adopted to refer to a whole entity and *MANNER* is not coded in this path verb 'enter'. However, it is possible for manner of motion along a path to be conflated with the path verb, similar to ASL; but such a conflation is restricted to those classifiers that involve the legged property of the noun category. Note that in ASL, the less marked classifiers can be legged (V-handshape) or whole entity (Gd-handshape). For human entities, if for some discourse motivation that triggers the adoption of a V-handshape for the predicate in example (18a), one would expect to observe the manner of motion along a path in the path verb. This is represented by the internal wiggling of the two selected fingers of the V-handshape. In this case, the manner of locomotion is incorporated into the locomotion verb (i.e., RUN in example [18a]) and the manner of motion along a path is conflated with the path verb. Unlike ASL, verbs like RUN, MARCH, and LIMP do not involve body classifiers; they are 'imit-signs' which reflect the actual locomotion of the limbs in the real world activity (see RUN in Fig. 7.20).

For animal entities, the unmarked form is the Y-handshape with the palm facing down. As a handshape for denoting a whole entity, it is restricted to denoting manner of motion along a path. Note that the V-handshape is not adopted as an alternative classificatory handshape for the animal category. However, there has emerged a new classificatory handshape to denote the legged property of the animal category in HKSL. This is in the form of a bent 5-handshape with the palm facing down. This handshape may incorporate the manner of motion along a path, which could mean the manner of running or walking along a path.

Example (19) below illustrates the conflation of manner of locomotion and manner of motion along a path in the predicate of the sentence 'A dog pounces on a man'.

(19) MAN CL: A_HUMAN_ENTITY_BE_LOCATED_AT,
FIGURE {[BE$_L$ + FIGURE$_j$]+PATH$_S$}— GROUND$_i$

'A man is located here'.

DOG POUNCE_ON CL: AN_ANIMAL_MOVE_ONTO_A_HUMAN_ENTITY
FIGURE MANNER {[MOVE+FIGURE$_j$]+ PATH$_P$+MANNER} GROUND$_i$

'A dog pounces on the man'. (Fig. 7.21)

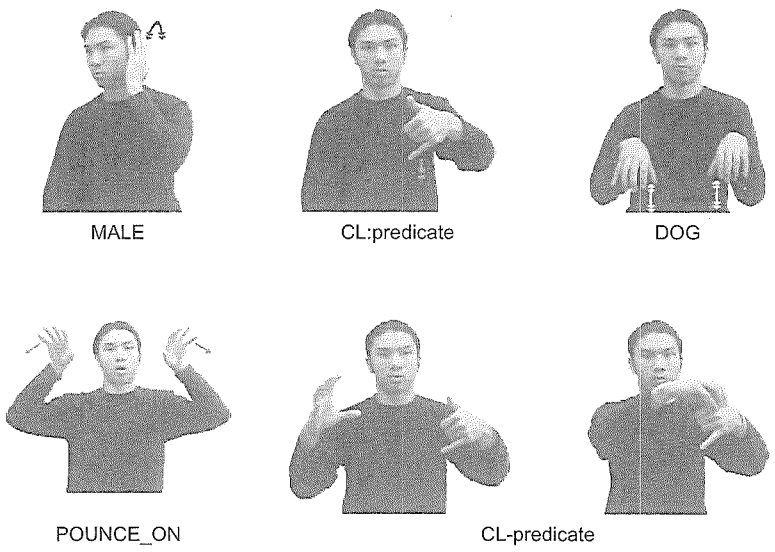


FIG. 7.21. A dog pounces on the man.

In this verb series, the path verb that is conflated with manner of motion along a path is preceded by a locomotion verb represented by an 'imit-sign'. The path verb involves a bent 5-handshape referring to animals with claws. This specific handshape combines with an arc movement morpheme is glossed as MOVE_ONTO an object. This movement ends with a hold on the Y-handshape associated with a human ground entity.

To conclude, HKSL is similar to ASL and SLN in that, in the verb series, the locomotion verb usually precedes the path verb. Also, manner of motion along a path is mapped onto the path verb; but in HKSL, such a conflation is restricted to those classifiers that show the legged property of the noun category. In fact, it seems that the Y-handshape in HKSL is rich in denoting manner of spatial configuration when the core schema is $PATH_S$. When the core schema is $PATH_P$, the manner of motion along a path is associated with a subset of classificatory handshapes that highlight the legged property of the noun category. The manner of locomotion appears to form a unique category in HKSL, the data so far reveal that they are associated more with imitating the specific pattern of movement of the entity in the real world activity rather than with specific classificatory handshapes.

CONCLUSION

In the analysis above, we demonstrated how the four basic semantic components of a motion event are lexicalized as verbs of motion and location in HKSL. We take [[*MOVE/BE*$_L$] + *FIGURE*] to be an abstract core unit from which a verb stem is formed and examine how other semantic components are conflated with it. We observe that manner of existence is mainly denoted by palm or finger orientation; that manners that denote posture, manner of locomotion, or manner of motion along a path may lead to a complex system of conceptual representation. Also, the 'imit-sign' that imitate the real world activity usually precedes a classifier predicate. However, the status of this sign is not so clear, at least not so in HKSL. The findings that it occurs quite freely and that it is does not involve a classifier predicate in HKSL make one wonder whether this sign forms part of the verbal predicate in the language. As the investigation on HKSL has just begun, more data are needed in order to examine the linguistic status of these signs in the so-called 'serial verb construction'.

At any rate, to ascribe linguistic status to the different elements in the predicate, one must ask whether this conceptual model of motion event has any psychological reality. Do native signers perceive [[*MOVE/BE*$_L$] + *FIGURE*] as the underlying semantic representation of the verb stem? Are there any constraints in the morphological derivation of classifier predicates? Another question is whether the conflation process is simultaneous or sequential. We believe that in order to resolve this puzzle, we have to go beyond what we see and try to discover the constraints in the derivation of [[*MOVE/BE*$_L$] + *FIGURE*] as an abstract core unit. An understanding of these constraints might throw light on the analysis of the morphological derivation of verbs of motion and location in HKSL.

ACKNOWLEDGMENTS

The research was supported by the Direct Grant of the Chinese University of Hong Kong, #2101020. We would like to thank audience of the classifier conference, Karen Emmorey, and Steve Matthews for helpful comments on the earlier drafts of this chapter. We would also like to thank Tso Chi Hong, Lam Tung Wah, and Kenny Chu for providing intuitive judgments on the signed language data. We thank also Kenny Chu for being our model and for preparing the images.

ENDNOTES

[1]In this chapter, the semantic categories are presented in italicized capital letters (e.g. *MANNER*). The HKSL signs are glossed and presented in simple capital letters. Signs that are glossed with more than one word are underscored. Where the data involve ASL signs, they will be noted separately.

[2]Other types of framing events include events of contouring in time (aspect), events of change or constancy among states, and events of correlation among actions, and events of fulfillment or confirmation in the domain of realization.

[3]Other co-events are *CAUSE*, *PRECURSION*, *ENABLEMENT*, *CONCOMITANCE*, *PURPOSE*, and *CONSTITUTIVENESS* (see Talmy, 2000, for explanation).

[4]Sometimes, both *PATH* and *GROUND* constitute the core schema of the event. Atsugewi displays this phenomenon. Though limited, there are a few verbs in English that also display this *PATH* and *GROUND* conflation pattern. Examples are 'He boxed the rolls of tissue' or 'The ship berthed there'.

[5]Note that English has a set of *PATH* verbs such as exit, enter, cross. But they are relatively less productive than verbs that are conflated with *MANNER*.

[6]In a recent analysis of child language acquisition, Choi and Bowerman (1995) added to the list *MOTION+DEIXIS*, defined as 'motion toward the speaker versus motion away from the speaker'. *DEIXIS* in Talmy's framework is regarded as a type of co-event on a par with *MANNER* and *CAUSE*.

[7]Various terms have been put forward to refer to this grammatical construction, classifier predicates (Corazza, 1990; Schick, 1990), verbs of motion and location (Supalla, 1986, 1990; Slobin & Hoiting, 1994); polymorphemic predicates (Collins-Ahlgren, 1990; Wallin, 1990), or polymorphemic verbs

(Engberg-Pedersen, 1993), to name but a few. For ease of reference, this chapter adopts the conventional terminology of 'classifier predicates'.

[8]Supalla (1986) proposed that there are two parts to this kind of construction: the movement root and handshape, the latter of which is considered as an obligatory 'affix' attached to the root.

[9]This verb serialization of the sample SLN sentence is conceived as a single event of motion whose third verb in the series is ENTER. This verb, according to the authors, is not inflected for '*FIGURE*' but simply implies crossing a boundary.

[10]Supalla actually argues that the path verb may be inflected for manner of motion along a path. However, such a realization is in a reduced form, through the use of a less marked classifier handshape like the V- or the Gd-handshape.

[11]$BE_{\perp}$ refers to BE-LOCATED-AT.

[12]This last line represents the conceptual structure of the motion event in question. 'CL' refers to classifier predicates.

[13]Some deaf signers may rest the Y-handshape on the palm of a 5-handshape to encode SIT.

[14]The description so far seems to suggest that a sequential presentation of semantic components in a motion predicate is the norm. However, we do observe that one of our native signers, a relatively older female, occasionally presented both *FIGURE* and *GROUND* simultaneously, followed by an index sign and a noun for referential identification. Whether such a representation is due to other factors, such as age, needs further investigation.

[15]Talmy (2000) suggested that signed languages may have *CONTOUR* and *DIRECTION* as the subcomponents of *PATH*. *CONTOUR* is *MOTION* that outlines the ground entity upon which the figural entity acts. Our project did not investigate these categories in detail. We would expect that *CONTOUR* is represented by a specific movement pattern of the figural entity. This pattern implicitly suggests the 'contour' of the ground entity such as 'a meandering river' or 'an undulating slope'. *DIRECTION* requires that the ground entity has already assumed a locus in space. As a result, the direction and route of movement of the figural entity is determined by the location of the ground entity in space.

[16]The location where the sign is articulated also suggests a nonhuman entity. The predicate is articulated in the space above the head level, signaling an object moving above the head of the signer.

REFERENCES

Collins-Ahlgren, M.(1990). Spatial locative predicates in Thai Sign Language. In C. Lucas (Ed.), *Sign language research: Theoretical issues* (pp.103–117). Washington, DC: Gallaudet University Press.

Choi, C., & Bowerman, M. (1995). Learning to express motion events in English and Korean. In B. Levin & S. Pinker (Eds.), *Lexical and conceptual semantics* (pp. 83–122). Oxford: Blackwell.

Corazza, S. (1990). The morphology of classifier handshapes in Italian Sign Language. In C. Lucas (Ed.), *Sign language research: Theoretical issues* (pp. 71–82). Washington, DC: Gallaudet University Press.

Engberg-Pedersen, E. (1993). *Space in Danish Sign Language: The semantics and morphosyntax of the use of space in a visual language*. Hamburg: Signum Press.

Levin, B. (1993). *English verb classes and alternations*. Chicago: University of Chicago Press.

Liddell, S., & Johnson, R. (1987, July). *An analysis of spatial locative predicates in American Sign Language*. Paper presented at the Fourth International Symposium on Sign Language Research, Lappeenranta, Finland.

McDonald, B. (1982). *Aspects of American Sign Language predicate system*. Unpublished doctoral dissertation, University of Buffalo.

Schick, B. (1990). Classifier predicates in American Sign Language. *International Journal of Sign Linguistics. 1*(1), 5–40.

Slobin, D., & Hoiting, N. (1994). Reference to movement in spoken and signed languages: Typological considerations. In S. Gahl, S. Dalbey, & C. Johnson (Eds.), *Proceedings of the Twentieth Annual Meeting of the Berkeley Linguistic Society* (pp. 487–505). Berkeley, CA: Berkeley Linguistic Society.

Supalla, T. (1982). *Structure and acquisition of verbs of motion and location in ASL*. Unpublished doctoral dissertation, University of California, San Diego.

Supalla, T. (1986). The classifier system in American Sign Language. In C. Craig, (Ed.), *Noun classes and categorization* (pp. 181–214). Amsterdam: John Benjamins.

Supalla, T. (1990). Serial verbs of motion in ASL. In S. Fisher & P. Siple (Eds.), *Theoretical issues in sign language research, Volume I* (pp. 127–152). Chicago:University of Chicago Press.

Talmy, L. (1985). Lexicalization Patterns: semantic structure in lexical forms. In T. Shopen (Ed.), *Language typology and syntactic description: Vol. III: Grammatical categories and the lexicon* (pp.57–138). Cambridge, UK: Cambridge University Press.

Talmy, L. (2000). *Towards s cognitive semantics*. Cambridge, MA: MIT Press.

Wallin, L. (1990). Polymorphemic predicates in Swedish Sign Language. In C. Lucas (Ed.), *Sign language research: Theoretical issues* (pp.133–148). Washington, DC:Gallaudet University Press.

Woodward, J. (1993). Lexical evidence for the existence of South Asian and East Asian sign language families. *Journal of Asian Pacific Communication, 4*(2), 91–106.

Williams, E. (1994). *Thematic structure in syntax*. Cambridge, MA: MIT Press.