

ASL and Gesture

Language and gesture in ASL: insights from child discourse

TISLR 2010
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- Historical stigma of “gestures”
- “Blindfold” on ASL research was necessary before
- Question of ASL and gesture is an opportunity to explore the largely uncharted waters of ASL and potentially the nature of human language
- In the past we were interested in showing that ASL is like spoken language; now it is exciting to show how ASL is different from spoken languages

[T]he ASL Linguistic signal consists of more than conventional linguistic forms. It also includes gradient aspects of the signal (typically directional aspects or placements), and gestures of various types.

Scott Liddell
Grammar, Gesture and Meaning in American Sign Language
Cambridge University Press, 2003

...It is possible, of course, that ASL in particular, and signed languages more generally, are organized differently than vocally produced languages.

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...It is much more likely that spoken and signed languages both make use of multiple types of semiotic elements in the language signal, but that our understanding of what constitutes language has been much too narrow.

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English Gloss:

CAR 3-CL“going in a direction and turning to the left”

Is the second sign an un-analyzable whole?

English Gloss:

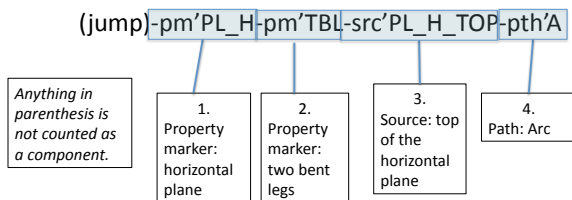
CAR 3-CL "going in a direction and turning to the left"

Doesn't it have the following information?

- 1) an entity (car)
- 2) going in a (path)
- 3) turning 90 degrees (shift in direction)
- 4) going in a new direction (new path).

An Exemplary Polycomponential Sign:

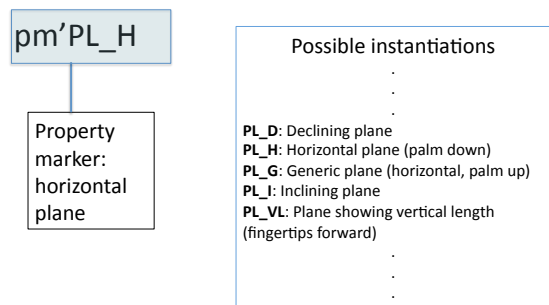
'two-legged figure jumps from the top of a horizontal plane in an arc path':



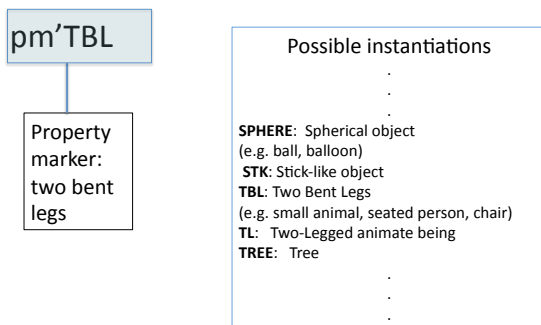
The BTS: Background and Purpose

- The BTS developed by Slobin, et al. (2001) was created to enable transcription of signed languages at the morphological level.
- The BTS was designed to capture morphological information such as aspect, path of movement, figure and ground, locative patterns, outlines of objects, and non-manual components.

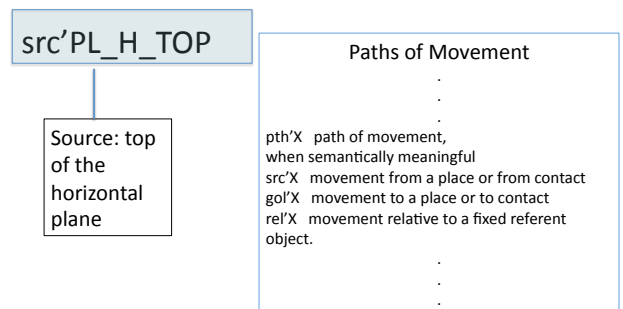
A List of Coding Possibilities (Instantiations) Exists for Each Component



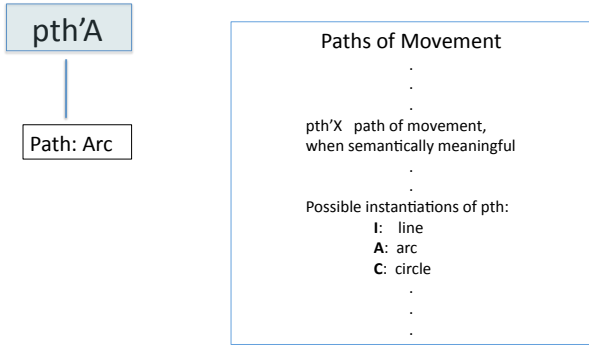
(jump)-**pm'PL_H**-pm'TBL-src'PL_H_TOP-pth'A



(jump)-pm'PL_H-**pm'TBL**-src'PL_H_TOP-pth'A

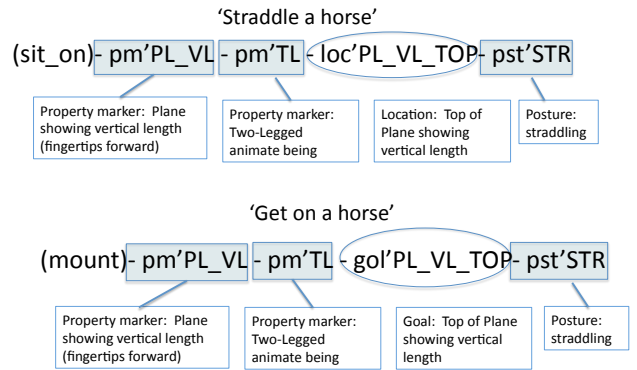


(jump)-pm'PL_H-pm'TBL-**src'PL_H_TOP**-pth'A



(jump)-pm'PL_H-pm'TBL-src'PL_H_TOP-**pth'A**

A "Minimal Pair" Reflected in Coding :



The Berkeley Transcription System segments the gesture-like features of ASL

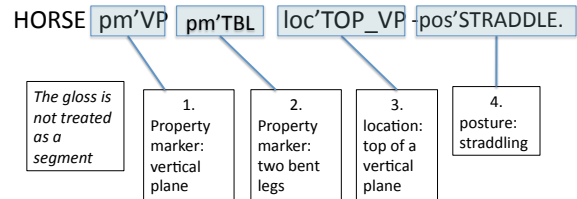
2 Questions for Gesture Analysis:

How does this segmentation affect the question of language-gesture distinction in ASL?

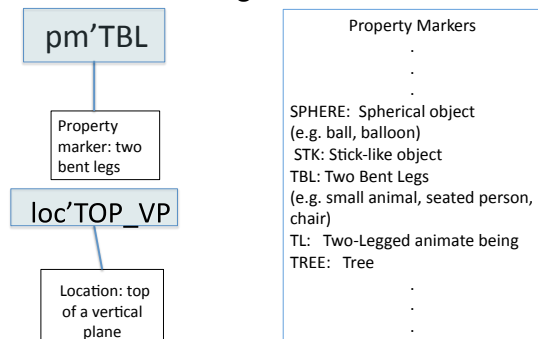
Is there a limit to the segmentation of gesture-like features in ASL?

The Berkeley Transcription System segments the sign,

"Horseback riding"
"Straddled on a horse"

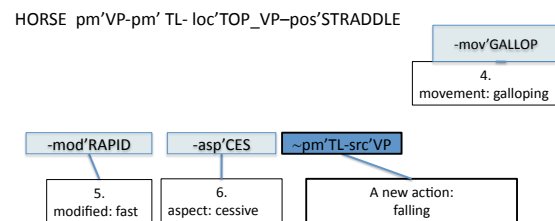


BTS provides Coding Possibilities for Each Segment



"Straddled on a horse"

...Galloping fast with a sudden stop after which the rider falls off.



“Straddled on a horse”

...Galloping fast with a sudden stop
after which the rider falls off.

HORSE {pm'VP-pm'TL-loc'TOP_VP-pos'STRADDLE-
mov'GALLOP-mod'RAPID-asp'CES}{~pm'VP~pm'TL-
src'VP}

A single sign which at first blush seems simple
but whose complexity will not be obvious
without specifying each unit of meaning.

To recoup:

-pm'TBL(a)-pm'TBL(b)-loc'NEXT-
asp'SLOW_MOTION~
pm'TBL(a)~pm'TBL(b)-mvt'KICK-
mod'HARD-gol'TBL(a)~pm'TBL(a)-
src'TBL(b)

-pm'TBL(a)-pm'TBL(b)-loc'NEXT-
asp'SLOW_MOTION~
pm'TBL(a)~pm'TBL(b)-mvt'KICK-
mod'HARD-gol'TBL(a)~pm'TBL(a)-
src'TBL(b)

This apparently simple sign is actually constructed of
8 meaning components (not counting the components
with tildes).

It is constructed of 3 distinct actions:

- Jumping into water
- Kicking the partner
- Being kicked off the trajectory of the jump

SEGMENTATION OPTIONS APPLIED TO CHILD DISCOURSE

Segment #1: Two persons airborne after having sprung from the diving board.

pm'TBL(a)-pm'TBL(b)-loc'NEXT-asp'DELAYED

Segment #2: One person kicking the other person.

pm'TBL(a)~pm'TBL(b)-mvt'KICK-gol'TBL(a)

Segment #3: The other person got kicked off the trajectory she is falling in.

pm'TBL(a)-src'TBL(b)

This apparently simple sign is actually constructed of
8 meaning components (not counting the components
with tildes).

-pm'TBL(a)-pm'TBL(b)-loc'NEXT-
asp'SLOW_MOTION~
pm'TBL(a)~pm'TBL(b)-mvt'KICK-
mod'HARD-gol'TBL(a)~pm'TBL(a)-
src'TBL(b)

pm'TBL(a)-pm'TBL(b)-loc'NEXT-
asp'SLOW_MOTION~
pm'TBL(a)~pm'TBL(b)-mvt'KICK-
mod'HARD-gol'TBL(a)~pm'TBL(a)-
src'TBL(b)

The manner of transcribing a classifier construction that
encodes multiple actions probably should demonstrate the
clusters of components for each action. One way of doing it:

{-pm'TBL(a)-pm'TBL(b)-loc'NEXT-
asp'SLOW_MOTION}{~
pm'TBL(a)~pm'TBL(b)-mvt'KICK-
mod'HARD-gol'TBL(a)}{~pm'TBL(a)-
src'TBL(b)}

Back to the horseback riding

{-pm'PL_VL-pm'TL- gol'PL_VL_TOP -
pst'STR}{~pm'PL_VL~pm'TL-mvt'GALLOP-
mod'AUG-asp'CES}{~pm'PL_VL~pm'TL-
src'PL_VL_TOP}

A single sign whose complexity will not be obvious without specifying each component.

pm'TBL(a)-pm'TBL(b)-loc'NEXT-asp'SLOW_MOTION~
pm'TBL(a)~pm'TBL(b)-mvt'KICK-mod'HARD-
gol'TBL(a)~pm'TBL(a)-src'TBL(b)

Does the sign really have subcategories? If so, we should use curly brackets to show them.

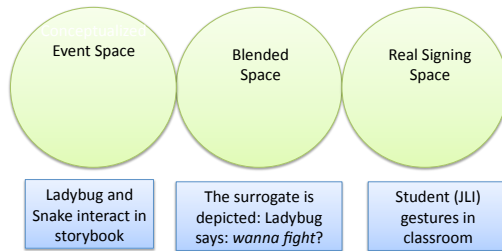
{pm'TBL(a)-pm'TBL(b)-loc'NEXT-asp'SLOW_MOTION}
{~ pm'TBL(a)~pm'TBL(b)-mvt'KICK-mod'HARD-gol'TBL(a)}
{~pm'TBL(a)-src'TBL(b)}

A sign with three clusters (total of 8 components)

- Cluster #1 = 4 components
- Cluster #2 = 3 components (plus 2 carried over from the first cluster)
- Cluster #3 = 1 component (plus 1 carried from previous clusters)

SEGMENTATION OF GESTURES IN SURROGATES

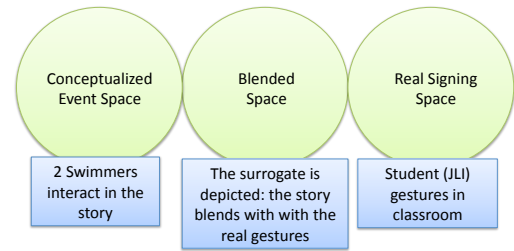
Scott Liddell describes a *surrogate* as an entity depicted in a signer's *blended space*:¹



¹Scott Liddell. *Grammar, Gesture and Meaning in American Sign Language* Cambridge University Press, 2003

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SEGMENTATION OF GESTURES IN SURROGATES

SWIM sur'SWIMMERS_JUMP- pm'TBL(a)-pm'TBL(b)-
loc'NEXT-mvt'JUMP

AFFECT AND GESTURE IN SURROGATES

MILK pm'CUP-gol'OBJ(table)
{ ^aff'ACCIDENT_HAPPENING_COMPLETELY_DISMAYED
(o) FALL }

SIMULTANEOUS SURROGATE USE

sur'SELF_LOOKING_AWAY-sur'YIS-TALK ~sur'SELF-
aff'I_AM_NOT_INTERESTED-dir'YIS

Goals for Using BTS

The Berkeley Transcription System (BTS) is in the CHILDES format. Some of the goals for using BTS are to:

- compute the number of meaningful components in each sign
- compute the frequency of different components across different signs.
- understand the combinatorial patterns of different components
- analyze the development of morphological complexity over time