The Berkeley Transcription System (BTS) Manual

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1. GOALS OF TRANSCRIPTION

The following conventions are intended to be consistent with CHAT and CLAN (with some necessary additions, given the nature of sign languages). The goal is to represent utterances in a consistent morphological and semantic notation, following the grammars of ASL and SLN (and, potentially, other sign languages). We have avoided any sort of phonological transcription of utterances in the basic representation of turns. These conventions are thus intended for the speaker tier (*). Dependent tiers (%) will be addressed later. Manual and non-manual elements are represented in a single line, using ASCII characters only.

Lexical items are written in capitals and bounded by spaces. Because of this distinctive use of capitalization, searches in CLAN must use the +k switch to recognize the distinction between upper/lower case. A sign is represented by at least two upper-case letters. There can be no spaces within a lexical item: The components of polycomponential lexical items are separated by hyphens (as discussed in Section 3, Polycomponential Signs); other elements are joined by underscore or parentheses without spaces. An utterance line ends with a period or question mark, preceded by a space.

Polycomponential signs and some other signs contain meaning components that fall into different categories. In this situation, the linguistic or meaning category is written in lowercase letters, followed by an apostrophe and the instantiation of that category in uppercase letters. For example, if one were transcribing a spoken language, a meaning category might be “number,” and the instantiation of that category might be “singular.” This would be transcribed as follows: number’SINGULAR. Similarly, a word that is marked for gender might be transcribed as: gender’MALE. An example from spoken English is the word “birds,” which would be transcribed as follows: BIRD-num’PL. The unit category’INSTANTIATION is counted as a single meaningful unit for the purpose of CLAN searches. See examples of this convention in Section 3, Polycomponential Signs.

1.1. Features Pertaining to Individual Lexical Signs

SIGN  #  SIGN  pause between SIGNS
SIGN(*2)  sign repeated twice, but only counted once (for analysis)
SIGN(*N)  sign repeated multiple times, but only counted once (for analysis)
SIGN_SIGN  two English words which represent a single sign, e.g. OH_ISEE (one meaning component)
SIGN-SIGN  two signs combined to produce one new sign, e.g. NOT-NEED (two meaning components)
SIGNSIGN  two signs combined to produce one new, compound sign, e.g. GOODNIGHT, WHITEHOUSE (one meaning component)
&SIGN  uncompleted SIGN
<SIGN> [?]  uncertain transcription
XX  unintelligible but definite sign, to be included in word counts
xxx  unintelligible sign or gesture, to be excluded from word counts
SIGN(fs)  SIGN is a fingerspelled loan sign
S_I_G_N(fs)  SIGN is fingerspelled, not a loan sign

---

1 See the CHILDES website for the full set of required conventions: http://childes.psy.cmu.edu/.
1.2. Additional Specifications of Individual Lexical Signs

<table>
<thead>
<tr>
<th>SIGN:</th>
<th>SIGN is held</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGN-^mod’PRX</td>
<td>SIGN directed to close/proximate location</td>
</tr>
<tr>
<td>SIGN-^mod’MID</td>
<td>SIGN directed to intermediate location</td>
</tr>
<tr>
<td>SIGN-^mod’DIS</td>
<td>SIGN directed to distant location</td>
</tr>
<tr>
<td>SIGN(1h)</td>
<td>one-handed SIGN (if usually 2h)</td>
</tr>
<tr>
<td>SIGN(2h)</td>
<td>two-handed SIGN (if usually 1h)</td>
</tr>
<tr>
<td>SIGN(nh)</td>
<td>non-dominant-handed SIGN (if anomalous)</td>
</tr>
<tr>
<td>SIGN(dh)</td>
<td>dominant-handed SIGN (if anomalous)</td>
</tr>
</tbody>
</table>

*Note: If marking both number of hands and which hand(s), the number of hands comes first. e.g., SIGN(1h)(nh). If SIGN is (1h), only mark which hand if the non-dominant hand is used.*

<table>
<thead>
<tr>
<th>SIGN(v)</th>
<th>SIGN is a verb (if ambiguous)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGN(n)</td>
<td>SIGN is a noun (if ambiguous)</td>
</tr>
<tr>
<td>SIGN</td>
<td>citation form</td>
</tr>
<tr>
<td>SIGN2</td>
<td>alternative form (e.g., WHERE, WHERE2)</td>
</tr>
<tr>
<td>X@ns</td>
<td>name sign (with X handshape)</td>
</tr>
<tr>
<td>X@is</td>
<td>idiosyncratic/invented sign (with X handshape)</td>
</tr>
<tr>
<td>X@hs</td>
<td>home sign (with X handshape)</td>
</tr>
<tr>
<td>SIGN@in</td>
<td>initialized sign</td>
</tr>
</tbody>
</table>

1.3. Numerical Signs

Signs which incorporate a number into the handshape are indicated using the numerical sign followed by an underscore and the incorporated number:

<table>
<thead>
<tr>
<th>ORD_1</th>
<th>ordinal sign (“first item”)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE_1</td>
<td>age sign (“one-year-old”)</td>
</tr>
<tr>
<td>WEEK_1</td>
<td>week sign (“one week”)</td>
</tr>
<tr>
<td>MONTH_1</td>
<td>month sign (“one month”)</td>
</tr>
<tr>
<td>PLACE_1</td>
<td>competition place sign (“first place”)</td>
</tr>
</tbody>
</table>

2. POINTS, INDEXES, AND PRONOUNS

<table>
<thead>
<tr>
<th>PNT_1</th>
<th>point to self</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNT_2</td>
<td>point to interlocutor</td>
</tr>
<tr>
<td>PNT_3(person)</td>
<td>point to third person, if present</td>
</tr>
<tr>
<td>PNT_3(obj)</td>
<td>point to object, if present</td>
</tr>
<tr>
<td>IX_3(person/object)</td>
<td>index a person or object in signing space, if not present</td>
</tr>
<tr>
<td>PNT_1_2</td>
<td>1st &amp; 2nd person singular (‘me and you’)</td>
</tr>
<tr>
<td>PNT_1_3</td>
<td>1st &amp; 3rd person singular (‘me and him/her’, ‘two of us’)</td>
</tr>
<tr>
<td>PNT_1+</td>
<td>1st person plural (‘me and somebody’, generic ‘we’)</td>
</tr>
<tr>
<td>Pronoun Type</td>
<td>Description</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
</tr>
<tr>
<td>PNT_S</td>
<td>Selective: specific points to each of the people or objects being referenced. This is used either to emphasize the individual referents or if the people being referenced are not physically near each other.</td>
</tr>
<tr>
<td>PNT_M</td>
<td>Multiple: The referents are indicated using a &quot;1&quot; handshape (index finger extended) and a sweeping motion. This can be used for any number of referents greater than 1.</td>
</tr>
<tr>
<td>PNT_N</td>
<td>Numbered: The number of people (or objects) being referenced is incorporated into the handshape of the pronoun (for 1-5 referents).</td>
</tr>
</tbody>
</table>

| PNT_1_2_S    | 1st & 2nd person plural, selective (‘me and specific others of you’) |
| PNT_1_2_M    | 1st & 2nd person plural, multiple/sweep (‘me and all of you’) |
| PNT_1_2_N    | 1st & 2nd person plural, numbered (‘me and a certain number of you’) |
| PNT_1_3_S    | 1st & 3rd person plural, selective (‘me and specific others’) |
| PNT_1_3_M    | 1st & 3rd person plural, multiple (‘me and all others’) |
| PNT_1_E      | 1st person plural, exclusive (‘we’, excluding addressees) |
| PNT_1_I      | 1st person plural, inclusive (‘we’, including addressees) |
| POSS_1       | 1st person singular, possessive |
| POSS_2       | 2nd person singular, possessive |
| POSS_3       | 3rd person singular, possessive |
| POSS_1+      | 1st person plural, possessive |
| POSS_2+      | 2nd person plural, possessive |
| POSS_3+      | 3rd person plural, possessive |
| SIGN_S       | fingerspelled S for possessive (e.g. MOM_S = Mom’s) |

Examples of more complex pronouns:

<table>
<thead>
<tr>
<th>Pronoun Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PNT_1 PNT_2</td>
<td>1st person, 2nd person, in succession (‘me, you’)</td>
</tr>
<tr>
<td>PNT_1_2*2</td>
<td>1st &amp; 2nd person (2) (‘me and you two’)</td>
</tr>
<tr>
<td>PNT_1_2*3</td>
<td>1st &amp; 2nd person (3) (‘me and you three’)</td>
</tr>
<tr>
<td>PNT_2_3*2</td>
<td>2nd &amp; 3rd person (2) (‘you and them two’)</td>
</tr>
</tbody>
</table>

AREA sign produced when an open-5 hand, face down, makes small circles in neutral space.

AREA-loc’X sign AREA produced somewhere other than neutral space. The -loc’X component is added to indicate the location of the area being indexed, e.g. AREA-loc’CHEST’B or AREA-loc’L.
3. POLYCOMPONENTIAL SIGNS

In the fullest possible elaboration, a polycomponential construction includes:

1. a gloss, indicated in lower case letters enclosed in parentheses to avoid counting it as a lexical item
2. paths of movement in the form -pth’X (also -src, -gol, and -rel)
3. property markers (figures and grounds) in the form -pm’X
4. locations in the form -loc’X
5. posture in the form -pst’X
6. movement patterns in the form -mvt’X
7. non-manual elements in the form -^mod’X (also -^opr, -^aff, and -^dis)
8. aspect in the form -asp’X

Only the gloss and one property marker are obligatory. Locations, movement patterns, and paths of movement may be absent or may have several entries. There can only be one aspect entry. These component morpheme types are indicated in lower case, followed by an apostrophe and specification of the content component; e.g., -pm’TL indicates a two-legged animate being. The order of the components is: parenthetical gloss, property marker(s), (ground/figure), location/movement, modification, aspect (see examples).

Each of the eight possible components of polycomponential verb transcription is presented below, with examples at the end of this section.

3.1. Gloss

The first symbol in the verb transcription is the approximate English gloss (e.g., jump, dismount, ride_seated, ride_mounted). The elements within a gloss are separated by underscores, in order to retrieve them as units.

3.2 Paths of Movement

-pth’X path of movement, when semantically meaningful
-src’X movement from a place or from contact
-gol’X movement to a place or to contact
-rel’X movement relative to a fixed referent object

The components “source” and “goal” can be combined with the component “locative relations” (see Section 3.4.1) to indicate which part of the figure and ground are in contact, e.g., (jump)-pm’PL_H-pm’TBL-src’PL_H_TOP-pth’A (‘two-legged figure jumps from the top of a horizontal plane in an arc path’). The components of path, source, and goal are indicated by uppercase letters from the following list. (The locative components of referent points in relative movement are the same as those for locative relations, and are listed in Section 3.4.1.)
3.2.1. **Shape (path only):**
I   line
A   arc
C   circle
W   wandering
Z   zigzag
R   rotating

3.2.2. **Vertical direction:**
U   up
D   down

3.2.3. **Front/back direction:**
F   forward
B   backward

3.2.4. **Lateral direction:**
S   side

3.2.5. **Body-oriented direction:**
R   right
L   left

3.2.6. **Oscillating direction:**
BF   back-and-forth

3.2.7. **Other directions:**
TOG   two property markers moving towards each other
AP   two property markers moving apart from each other
OBJ(ref)   real-world object referent (e.g., -gol’OBJ(paper))
X_pm’X  location/direction in relation to property marker (e.g., L_pm’CYL ‘left of cylindrical object’)
OUT   out
IN   in

3.3. **Figures and Grounds**
The notation -pm’X indicates a property marker of type X. The following list of property markers is partial, and is open to refinement; handshape pictures are provided with this section. Note that property markers are given semantic (e.g., ‘two-legged animate being’) rather than phonological (e.g., ‘V’) definitions. However, in some cases (as in HOLD property markers), the general semantic category (HOLD) is followed by an abbreviation for the specific handshape used. Sometimes there is no single English word that summarizes the semantic content of a property marker; and in many cases the meaning range of a property has not yet been fully determined. Therefore the abbreviations should be treated as mnemonics for the category
indicated by the handshape. When two property markers are part of a single verb, the order of notation is ground followed by figure. When specification is required regarding which property markers represent the figure and ground, this is indicated in parentheses following the property marker (e.g. pm’STK(F), for a stick property marker that acts as a figure). If the two hands represent two entities (e.g. a cup and its lid), use two separate pm’s. If the two hands represent a single entity, use one pm (e.g. pm’HO_C(2h)).

3.3.1. Entity property markers:

Note: The pictures below are of a right-handed model. Thus pictures of the right-hand represent the dominant hand, while pictures of the left hand represent the non-dominant hand.

LEX: Lexical property marker for a specific polycomponential sign
LEX(x): Lexical property marker with x handshape

AIR: Air

AIRPLANE: Airplane

BULK: Bulky mass, such as a block

BOX: Box-shaped object

CIR: Circular object
CN: Container

CYL: Cylindrical object

FBL: Four Bent Legs (e.g. four-legged animal)

FD: Flat Disk or Hole

FL: Four-Legged erect being (two-hands)

GUN: Gun-like object
LID:  Lid (to be used in conjunction with ground pm)

OBJ:  Real object (specified in parentheses)

PW:  Parallel walls

PL:  Plane (non-specific posture)

PL_D:  Declining plane

PL_H:  Horizontal plane (palm down)

PL_G:  Generic plane (horizontal, palm up)

PL_I:  Inclining plane
PL_N: Narrow plane (horizontal)

PL_VH: Plane showing vertical height (fingertips up)

PL_VL: Plane showing vertical length (fingertips forward)

PTH: Path property marker, used to show the path that a figure travels (shown: to the left, forward, uphill)

SPHERE: Spherical object (e.g. ball, balloon)

STK: Stick-like object
TBL: Two Bent Legs (e.g. small animal, seated person, chair)

TL: Two-Legged animate being

TREE: Tree

TRIGGER: Trigger finger

VEH: Vehicle property marker
3.3.2. **Handle property markers:**

**HO_ * ** Handle property marker, where * is a label for the handshape.

Handshape labels follow the ASL manual alphabet (e.g. HO_S represents a closed fist as in the S handshape). In addition, there are handshapes which do not match a letter in the manual alphabet. These are labeled following Tenant & Brown (1998).

**BO:** Baby O

![Baby O](image)

**FO:** Flattened O

![Flattened O](image)

**FF:** Flattened F

![Flattened F](image)

**BL:** Bent L

![Bent L](image)

**ON:** Open N

![Open N](image)
WON: Wide Open N

OO: Open O

WC: Wide C

WSC: Wide squarish C

BF: Bent 5

BT: Bent 3
OB: Open B

XA: Thumb on side of bent index finger (2 views)

OXA: Thumb off side of bent index finger

OT: 1 Tip (pad of index finger)

OAT: Open A Tip (pad of thumb)

OF: 1 Face (face of index finger)
AOB:  Arms, open B (whole arms, including hands)

3.3.3. Tracing property markers

TR_*  Tracing property marker, where * is a label for the handshape.

Tracing property markers are transcribed as pm’TTR_*-trc’X, where * is the handshape used to do the tracing and X is the shape traced, e.g. pm’TTR_STRIP-trc’LONG. The following trace handshapes have been defined:

PLANE

CS:  Curved surface

STRIP:
3.3.4. Body part designation:

If the signer uses an actual body part, rather than a manual sign to designate a body part, use the following notations:

pm’B_BODYPART referential use of the signer’s body to represent an actual body part, e.g. pm’B_HEAD.

Note: In a polycomponenental construction, the body often serves as the ground when used in this way.

pm’OBJ(bodypart) a sign articulated towards another person or object, in which case body parts are treated like other objects. It is possible to specify whose body the sign was directed towards, e.g. gol’OBJ(mouth_2) to represent a sign articulated on the addressee’s (2nd person) mouth.
3.4. Locative relations

The notation -loc’X indicates a locative relation between figure and ground of type X. Locative components are used to indicate the location of the figure property maker with respect to the ground property marker. The following is a partial list:

INT  interior (‘inside’)
SUP  superior (‘above’)
INF  inferior (‘below’)
TOP  top (‘upper surface’)
BOT  bottom (‘under surface’)
EDG  edge
FRO  front
BAC  back
PAR  parallel
NXT  two property markers articulated at the same time and are articulated next to each other, but do not indicate a figure/ground relationship.
BHD  behind
AHD  ahead
RSP  referent space: discourse implied, previously established
0   referent space: frame implied, not previously established

Note: Two locative components can be combined; e.g., FRO_EDG (front edge).

The notation loc’CON is used to describe two property markers which do not have a figure-ground relationship but are in contact. To add further information about where the two pm’s make contact, use a parenthetical description to indicate where on the HANDS the two pm’s were in contact:

loc’CON     contact without a figure-ground relationship
loc’CON(x) contact at x location on the hands, e.g. loc’CON(fingertips)

3.5. Posture

The component “posture” (pst’X) indicates the posture of the figure for the subset of polycomponential verbs which indicate posture. Examples of such verbs are sit, stand, lie, mount, and ride. The following posture components have been defined:

ERc  erect
RCL  reclining
RCL_V reclining ventrally
STR  straddling
SIT  sitting
RCL_D reclining dorsally

3.5.1. Orientation

The component “orientation” is used to indicate the orientation (relative to the signer) of either the figure or the ground. In a polycomponential construction, information about orientation and posture should follow the property marker to which it refers. Orientation is only marked when it differs from the default orientation for that property marker in that referent situation. It is possible to define orientation by the direction in which the palm and fingertips are facing (e.g.,
ori’FF = palm forward, fingertips forward):

Palm:
F  forward
B  back
S  side
U  up
D  down

Fingertips:
F  forward
S  side
B  back

Orientation information can be written as two letters, one for palm orientation and one for
tip orientation. If the orientation component does not add meaning to the construction, add
orientation as part of the figure or ground property marker (e.g., pm’VEH_SF is a vehicle
property marker with the palm sideways and the fingertips forward).

3.6. Movement patterns

The notation -mvt’X indicates the movement pattern of a verb. Lexical movement (mvt’LEX)
indicates the movement pattern that identifies the particular verb. The lexical movement pattern
does not contrast with other movement patterns; its only function is to indicate that the
configuration has the meaning of the particular verb.

-mvt’LEX(verb)  movement which defines a lexical item but gives no further meaning; e.g.,
the ASL verb ‘ride’ (on an animal) consists of property markers indicating
the configuration of ground (vertical plane), figure (two-legged creature),
and posture (straddling), plus a non-directional component of movement
(rotating). Because this movement does not contrast with any other
movement using this pattern of components, it is simply transcribed as -
mvt’LEX(ride).

-mvt’WIG        wiggling movement
-mvt’BOUNCE     bouncing movement
-mvt’SHAKE      shaking movement
-mvt’WAVE       waving movement
-mvt’CLOSE      hand closing movement
-mvt’OPEN       opening movement
-mvt’JAB        short, jabbing movement
-mvt’LONG       showing long object, e.g. shelf of bed
-mvt’BEND       bending movement
-mvt’CP         change in posture
-mvt’CO         change in orientation
-mvt’WANDER     wandering movement
-mvt’ALT        alternating movement (single-handed or between hands)
3.7. Tracing
The notation trc’X indicates a construction in which the shape of an object is traced. This is used primarily for SASS’s and descriptive signs. When tracing is used, the transcription includes a pm’TR_* (tracing handshape) component as well as a trc’X (shape of tracing) component. For example:

pm’TR_STRIP-trc’F_A  (an object indicated using a STRIP handshape follows a forward arc)

Refer to Section 3.3.3. (Tracing property markers) for a partial list of tracing handshapes.

3.8. Non-manual components
See Section 4.2 for an explanation of non-manual components and a list of non-manual components that may be included as part of a polycomponential construction.

3.9. Aspect
The notation -asp’X indicates an aspect of type X. Various aspects can be superimposed on a verb. A full list is not yet ready. Example codes are:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CES</td>
<td>cessive (includes a sudden stop or cut off)</td>
</tr>
<tr>
<td>ITR</td>
<td>iterative (continuous with clear pauses or stops)</td>
</tr>
<tr>
<td>ITR_CUM</td>
<td>iterative cumulative (e.g., stacking of blocks, one on top of the other)</td>
</tr>
<tr>
<td>CONT</td>
<td>continuous</td>
</tr>
<tr>
<td>DIST</td>
<td>distributive</td>
</tr>
<tr>
<td>DEL</td>
<td>delayed inceptive (about to do something)</td>
</tr>
</tbody>
</table>

3.10. Other features of polycomponential constructions

3.10.1. Configurations as units
A configuration of property markers can act as a unit with respect to another component, including real-world objects. Curly brackets are used to indicate simultaneity. With regard to verbs, a configuration can move to a new location; for example, a doll on top of a board is moved to be located on a table:

(put){-pm’PL_H-pm’TL-loc’PL_H_TOP}-gol’OBJ(table)

3.10.2. Continuation from previous utterances
In a series of utterances, a configuration can be held or continued from a previous utterance. For example, if the doll-on-board had already been set up in a previous utterance, the tilde (~) is used for each component which is continued, to indicate that this component was not created anew in the following utterance:

(put){--pm’PL_H--pm’TL--loc’TOP} -gol’OBJ(table)

In addition, the component may serve as a different element in the second utterance, e.g., src’INT can become --loc’INT in a subsequent utterance. This means that the element with the tilde is continued from the end-product of the previous utterance.
If part or all of an entire polycomponential construction is continued from a previous
construction, this is indicated using a tilde (~) before the whole construction. This may happen
when one motion is continued across several constructions.

3.10.3. Continuation with handshape change
The percent sign (%) is used when the handshape changes to form a new sign which adds
meaning, yet the configuration is held over from the previous utterance. In the following
example, in the first construction—(head_move)—pm’HEAD is formed with one handshape, but
in the second construction—(look_around)—the index and middle fingers are extended forwards
to form pm’%LOOK:

(look_around)-~pm’CN-pm’%LOOK-~loc’INT_SUP-mvt’LR-pm’HEAD’-mvt’LR ~^aff’B

3.10.4. Shorthand for figure and ground
When property markers or other elements are repeated more than once in a polycomponential
construction (e.g. first as pm and then as src or gol), the later instance(s) of the element can be
notated using the shorthand F (for Figure) or G (for Ground). For example:


could be written as:

(put)-pm’PL_G(book_G)-pm’PL_H(book_F)-gol’G_TOP

3.11. Examples of polycomponentual signs
The following are examples of polycomponentual verbs, with possible translations in
parentheses. (Note that this analysis reveals derivational relationships between verbs of location
and verbs of movement.)

(sit_on)-pm’PL_VL-pm’TL-loc’PL_VL_TOP-pst’STR = ‘sit on a horse’
(mount)-pm’PL_VL-pm’TL-gol’PL_VL_TOP-pst’STR = ‘get on a horse’
(ride Mounted)-pm’PL_VL-pm’TL-loc’PL_VL_TOP-pst’STR-mvt’LEX(ride) = ‘ride a horse’
(dismount)-pm’PL_VL-pm’TL-loc’PL_VL_TOP-pst’STR-src’PL_VL = ‘get off of a horse’
(mount_seated)-pm’CN-pm’TBL-gol’CN-pst’SIT = ‘get into a car’
(ride_seated)-pm’CN-pm’TBL-loc’CN_TOP-pst’SIT-mvt’LEX(ride) = ‘ride in a car’

(jump)-pm’PL_G-pm’TL-pst’ERC-mvt’LEX(jump) = ‘jump up and down’
(jump)-pm’PL_G-pm’TL-ERC-src’PL_G = ‘jump off of a horizontal plane’
(jump)-pm’PL_G-pm’TL-loc’PL_G_TOP-pst’ERC-src’PL_G-gol’PL_G = ‘jump from one point
to another on a horizontal plane’

(get_on)-pm’PL_H-pm’TBL-gol’PL_H_TOP-pos’USL = ‘cat gets on high, side, left table’
(give)-pm’LEX(give)-src’3-gol’1 = ‘give from her to me’
(give)-pm’CYL-src’3-gol’1 = ‘give cylindrical obj from her to me’
3.12. Verb agreement
Verb agreement is indicated by the same conventions as used for transcribing directionality in verbs of motion (i.e., by use of src/goal and numeric indications, as in the examples of ‘give’, above). For example, ‘you show me’: (show)-pm’LEX(show)-src’2-gol’1.

4. TEMPORAL COMPONENTS OF SIGNS

4.1. Manual simultaneity

4.1.1. Simultaneity within an utterance
Single curly brackets surrounded by spaces enclose elements that co-occur in an utterance. For example, a child signs CANDY while pointing on a book with the non-dominant hand:

*CHI: \{ CANDY PNT(nh)(on_book) \}.

Note: Indicate which sign is on the non-dominant hand; the default is the dominant hand.

Curly brackets that enclose more than one sign are surrounded by spaces. To indicate earlier onset of one sign in curly brackets, append (o) to the sign, e.g.:

*CHI: \{ CANDY(o) PNT(nh)(on_book) \}.

Curly brackets that indicate simultaneity within a complex sign are not surrounded by spaces, as in the following example, given in Section 3.10.1 (configurations as units):

(put){-pm’PL_H-pm’TTL-loc’PL_H_TOP}-gol’OBJ(table)

4.1.2. Simultaneity between utterances
Overlaps are coded in the standard CHAT fashion:

*CHI: WANT < BOOK > [>] PNT_2 ?
*MOT: < WANT > [<] .

Note on utterance segmentation: If a signed utterance is grammatical, break the utterance by proposition or clause boundaries. If a signed utterance is ungrammatical, break the utterance by prosody (indicated by pauses, placing the hands down, etc.).

Non-manual elements are indicated by a carat (^). There are four types, as described below: operator (^opr), modification (^mod), affect (^aff), and discourse marker (^dis). Such an element can be added to a single sign; however, if the non-manual element has scope over several signs, this is indicated using the following conventions:
SIGN-\(^{\text{opr\text{'}X}}\) non-manual element associated with a single sign
\(^{\text{opr\text{'}X}}\) SIGN SIGN ^ non-manual element has scope over several signs

If two different non-manuals are superimposed on a single sign or utterance, each has its own carat, using the following conventions:

\{ \(^{\text{opr\text{'}X}}\) \(^{\text{mod\text{'}X}}\) \} \text{SIGN} \quad \text{simultaneous onset of two non-manuals}

\{ \(^{\text{opr\text{'}X}}\) \(^{\text{mod\text{'}X}}\) \} \text{SIGN} \text{SIGN} ^ \quad \text{two simultaneous non-manuals over two signs}

SIGN \(^ ^ \quad \text{simultaneous offset of two non-manuals}

\(^{\text{opr\text{'}X}}\) \(^{\text{mod\text{'}X}}\) \text{SIGN} \quad \text{sequential onset of two non-manuals}

\(^{\text{aff\text{'}X}}\) \(^{\text{opr\text{'}X}}\) \text{SIGN} \text{opr}^ \text{SIGN} \text{aff}^ \quad \text{sequential offset of two non-manuals}

SIGN-\(^{\text{opr\text{'}NEG}}\) \quad \text{non-manual which adds a component to a sign}
SIGN-\(^{\text{opr\text{'}NEG}}\) \(^{\text{aff\text{'}X}}\) \quad \text{simultaneous onset of two non-manuals w/in a sign}

### 4.2.1. Operators

\(^{\text{opr\text{'}X}}\) grammatical operator which operates on a whole phrase or clause (e.g., negation, yes/no question, wh-question, topic marker, relative clause marker, conditional marker) (partial list)

\(^{\text{opr\text{'}NEG}}\) negation
\(^{\text{opr\text{'}YNQ}}\) yes/no question
\(^{\text{opr\text{'}WHQ}}\) wh-question
\(^{\text{opr\text{'}TOP}}\) topic marker
\(^{\text{opr\text{'}REL}}\) relative clause marker
\(^{\text{opr\text{'}COND}}\) conditional marker
\(^{\text{opr\text{'}AFR}}\) affirmation (head nod)
\(^{\text{opr\text{'}RHQ}}\) rhetorical question

### 4.2.2. Modification

\(^{\text{mod\text{'}X}}\) modifies the referential meaning being expressed by adding a dimension (e.g., augmented/diminished size, rate, intensity) (partial list)

\(^{\text{mod\text{'}RAP}}\) rapid movement
\(^{\text{mod\text{'}DUR}}\) durative activity, situation
\(^{\text{mod\text{’}AUG}}\) augmented size, rate, or intensity
\(^{\text{mod\text{’}EFF}}\) with exaggerated effort
\(^{\text{mod\text{’}CARE}}\) with care or caution
\(^{\text{mod\text{’}FADE}}\) fading movement or articulation
4.2.3. Discourse markers

^dis’X markers which regulate the flow of discourse (e.g., checking for agreement, comprehension, confirmation) (partial list)

^dis’CONF confirmation check
^dis’AGR agreement
^dis’PRMPT prompt

4.2.4. Affect

Affect is added to signs in different ways. When a signer is talking about his or her own experience, or is acting as a narrator describing his or her own view of someone else’s experience, affect is transcribed as a component in the form aff’X:

^aff’X freely varying affective accompaniment to a lexical item or utterance to indicate the signer’s attitudinal stance towards the situation being communicated (e.g., disgust, surprise) (partial list)

^aff’DISGUST disgust
^aff’SURPRISE surprise
^aff’ANGER anger

Alternatively, when a signer takes on the affect of another character for a specific sign, or of his or her own affect at a different point in time (e.g., telling a narrative about one’s self), the signer uses a form of role shift. This can occur as a component of a polycomponential sign, or as an added meaning component to an individual sign, and is transcribed as follows:

^aff’RS_X freely varying affective accompaniment to a lexical item or utterance to indicate the affect of the character being represented, e.g. ^aff’RS_SCARED(baby).

(See Section 4.2.5., Role Shift, for transcription of role shifting which has scope over several signs or utterances.)

Note: In a polycomponentional construction, the body often serves as the figure when used in this way.

4.2.5. Role shift

When a signer takes on the perspective of the character being represented for an extended period of time, this is transcribed as a role shift:

`RS(char) SIGN ` role shift: The entire signed utterance contained within the role-shift marker is produced from the perspective of the character being represented. Onset and offset of role shift are indicated by a reverse apostrophe (left single quote, grave accent) and indication of the person represented by the role shift is indicated in parentheses. Note: RS is in capital letters, since it is a meaningful element.
4.2.6. Gaze

It is often essential to know where signers direct their gaze while signing. Gaze direction is indicated by an asterisk (*) and an indication, in lower case, of the object of gaze; e.g.:

*mot looks at mother
*book looks at book

Gaze direction is indicated only when the transcriber considers that it is relevant to analysis of the interaction. Special notations are used to indicate a recipient’s view of particular signs, indicated by backslashes (\). Such information is especially important for assessing a child’s comprehension.

\- SIGN \ recipient does not see SIGN
\q SIGN \ unsure whether recipient sees SIGN

Note: For any modification other than the extension of neutral signing space, insert a %com line to explain how the SIGN is modified.

4.2.7. Modification of signs

\@ SIGN \ signer modifies location of SIGN outside its normal location
\@\- SIGN ... simultaneous onset of two recipient markings (gaze and modification markings may occur simultaneously)
... SIGN \ simultaneous offset of two recipient markings
... SIGN @\-\ simultaneous offset of two recipient markings

5. EXTRALINGUISTIC COMMUNICATIVE BEHAVIOR

5.1. Gestures and actions

If part of an utterance consists of non-signed but meaningful activity, notation of such activity is included as main line commentary in square brackets, as follows:

[%ges: identification] identifies the gesture and lexical interpretation for gestures occurring without the use of any object or prop, and/or outside of typical signing space, e.g., [%ges: write] (See Section 3.3.3. for gestures which are reported actions of another person or object.)

[%act: identification] identifies the activity that replaces some or all of an utterance, performed with or on some object, e.g., [%act: throws doll]

[%mim: description] mimed gesture: the signer is reporting the actions of another person or object and these actions include mimed gestures, e.g. [%mim: wave]
5.2. Attention-getting devices
Various means are used to get the attention of the recipient. These devices are indicated by @ag. The @ag is part of the utterance line. The following attention getting-devices have been identified:

\begin{itemize}
  \item t@ag   tap on person
  \item w@ag   wave at person
  \item g@ag   grab person
  \item f@ag   touch face of person
  \item p@ag   pound on surface
  \item l@ag   person flashes light
\end{itemize}

6. PERFORMANCE AND CONTEXTUAL SITUATION

6.1. Errors and unconventional signs
An error is indicated by [*], in the standard CHAT fashion. If an entire utterance is ungrammatical, with no localizable error within the utterance, [*] is placed at the beginning of the line. If an error can be localized, the intended SIGN is given in square brackets with an equal sign, followed by [*]; e.g.:

*CHI:   DAD CHAIR [= SIT] [*] HERE .

Explanations of errors are given on a %err dependent tier, using codes including the following:

\begin{itemize}
  \item $dir  directional error
  \item $pm   property marker error (wrong pm used)
  \item $hs   handshape error
  \item $lex   sign error (wrong sign used)
  \item $loc  location error
  \item $mvt  movement error
  \item $po   palm orientation error
  \item $syn  syntax error (ungrammatical utterance)
\end{itemize}

If there is more than one error on a line, separate each explanation with a semicolon bounded by spaces. For example, if a child used the wrong handshape for DAD and signed CHAIR with a movement pattern that means SIT, the transcription and error coding would be as follows:

*CHI:   DAD [*] CHAIR [= SIT] [*] HERE .
%err:   DAD $hs ; CHAIR $mvt = SIT ;

In words with multiple components, use the [*] with a number to indicate which component has the error. However, if the child confuses src and gol, mark this as an error with the * symbol only on the first component, and then add [*] at the end of the classifier construction to mark the error, e.g:

*CHI:   BOY (grab)-pm’HOLD-mvt’CLOSE-src’3*-gol’1 [*].
%err:   src’3-gol’1 $agr = src’1-gol’3 ;
Additional error notations:
[*q] possible error
[*u] unspecified error somewhere in the utterance, but not tied to one particular SIGN
[*g] a sign that is gestural in nature but incorporates conventional sign language handshapes, seen in second language learners and signers using manual codes for spoken language

Note: For phonological errors, the utterance line should represent what is semantically meant by the sign, i.e., what the addressee should get from the message, and not a phonological representation of what the signer signed. The notation of phonological errors will depend on the transcriber’s specific research question.

Note: Some “errors” may in fact be creative uses of signs by non-native language users or users who have limited native language models (e.g., hearing parents, children, individuals exposed only to signed systems). In these cases, the transcriber must decide how notate the errors. Some may wish to transcribe them as true errors, while others may want to invent new conventions to represent these creative or non-conventional uses of signs.

6.2. Empty utterance line
If a turn consists of a definite, but non-signed response, use the standard CHAT convention of beginning the utterance line with zero (e.g., *CHI: 0). The zero is used when the interlocutor uses only an attention getter (*CHI: 0 t@ag), action, and/or gesture.

6.3. Continuation across utterances
If a sign is continued or held from the previous utterance, the tilde (~) is used to indicate that this sign was not created anew in the following utterance, e.g. ~SIGN.

6.4. Interruption
Interruption and continuation after interruption are coded in the standard CHAT fashion. For example:

*MOT: WANT +/-.
*CHI: PNT_3(on_book).
*MOT: +, READ BOOK.

6.5. Retracing
Standard CHAT conventions are used for retracing and retracing with correction, as in these examples:

*CHI: <MOTHER> [/] MOTHER LEAVE.
*CHI: <BEAR> [*] [/] BEAR.
%err: BEAR $mov
6.6 Repeated, compressed constructions
Sometimes a signer will repeat a construction that has been previously produced in order to re-instate a perspective from which the signer had temporarily shifted. In this type of repetition, the construction is produced in a compressed form, without the set-up or explanation that was required the first time. This is indicated as:

`^cmp UTTERANCE ^` the utterance contained within the carats is a repeated, compressed version of a previous utterance.

7. DEPENDENT TIERS
The following is a partial list of dependent tiers for analysis of sign language. Other tiers can be added, based on the particular research question being addressed.

- `%act` modifies the preceding utterance line, describing actions of signer or recipient that are necessary for the understanding of the transcription
- `%att` describes participants’ attention (e.g., CHI and MOT not attending to one another)
- `%com` comment
- `%fg` description of figure/ground relationship
- `%ges` phonological description of gesture
- `%gls` gloss (written-language paraphrase for particular complex utterance lines)
- `%mor` morphology
- `%pho` phonology
- `%sem` semantics
- `%spa` speech act
8. **EXAMPLES**

8.1. **SLN (Sign Language of the Netherlands)**

This is a segment of joint drawing activity between a mother and her daughter of 2;8 (data of Nini Hoiting):

*MOT: \( \text{PNT(nh)(with\_pen\_on\_slate) \text{< FATHER > [>] } \)}.

*CHI: \( \text{< MAN > [<> FATHER PNT\_3(on\_slate).} \)

*MOT: \( \text{t@ag MAN} \)

*CHI: \( \text{MAN} \)

*MOT: \( \text{PNT\_3(at\_drawing)} \)

*CHI: \( \text{PNT\_3(at\_drawing) PNT\_1 [%ges: long\_ears]} \)

*MOT: \( \text{PNT\_2 PNT\_3(on\_slate).} \)

*CHI: \( \text{PNT\_3(on\_slate) GRANDPARENTS}. \)

*MOT: \( \text{GRANDMOTHER} \)

*CHI: \( \text{PNT\_3(on\_slate)(*N) < A\_LOT(*N) > [>] \)}.

*MOT: \( \text{<^dis’CONF A\_LOT FACES > [<> A\_LOT FACES >]} \)

8.2. **ASL (American Sign Language)**

This is a segment of book reading between a mother and her daughter of 1;9 (data of Reyna Lindert):

*MOT: \( \text{t@ag(*2) w@ag ^opr’WHQ SEE WHAT(1h) ^ ?} \)

*CHI: \( \text{MOUSE(*N)} \)

*MOT: \( \text{t@ag g@ag(nh): \- ^opr’WHQ WHAT(1h) ^ \)}\)

*CHI: \( \text{0 [%act: lifts panel in book] *mot}. \)

*MOT: \( \text{^opr’WHQ WHAT(1h) ^ ?} \)

*CHI: \( \text{< PNT\_3(on\_book) *mot > [>]}. \)

*MOT: \( \text{< ^opr’WHQ WHAT(1h)(*2) ^ > [<>] ?} \)

*MOT: \( \text{^opr’YNQ \- CAT \t@ag(nh) CAT PNT\_3(at\_cat\_in\_book) ^ < CAT > [>] ?} \)

*CHI: \( \text{< ^opr’NEG 0 ^ > [<] [%ges: don’t know/not me]} \)

%ges: \( \text{open 5s, wrists rotate out} \)

*MOT: \( \text{^opr’WHQ WHAT(1h) ^ ?} \)

*CHI: \( \text{<BEAR> [*] //] BEAR}. \)

%err: \( \text{BEAR $mvt} \)

**Reference**