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# Sign-gesture symbiosis in Brazilian Sign Language narrative

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While the relation of gesture to speech has now been of interest to oral language linguists for several decades, the same cannot be said of sign linguists. To the contrary, these same decades have been devoted to demonstrating the nongestural nature of signed languages (SLs) in order to establish them firmly as natural languages. The success of this effort can be seen by the placement of SLs at the extreme 'linguistic' end of McNeill's presentation of what he calls the Kendon Continuum (1992: 3), in its relation to linguistic properties:

Gesticulation → Pantomime → Emblems → Sign Language

In this array, gesticulation and pantomime are understood to be devoid of linguistic properties, while emblems are thought to have some linguistic properties, and SLs to be totally linguistic. By compacting SLs at the 'non-gestural' end of the gesture continuum, students of gesture have isolated them from anything that approaches gesticulation.

Meanwhile, on the oral language side, research piles up in support of the proposals of Kendon (1980, 2004) and McNeill (1992) that gesture and speech form, in the words of McNeill, 'a single integrated process of utterance formation in which there is a synthesis of opposite modes of thought -- global-synthetic and instantaneous imagery with linear-segmented temporally extended verbalization' (1992: 35). Most work advancing this 'single integrated process' hypothesis has been done on cospeech gesture, that is, gesture accompanying the speech of users of oral languages, several

recent examples of which are represented in this volume. These studies focus on the 'gesticulation' end of the gesture continuum, at which speech is a necessary prerequisite for the occurrence of gesture. In terms of co-occurrence of speech, as opposed to linguistic properties, the order of the continuum shifts: Gesticulation is followed by 'emblems', with which speech is optional, then by 'pantomime' and 'sign language', both of which are only produced in the obligatory *absence* of speech (McNeill 1992: 2). The result of this analysis is that SLs appear to be self-contained systems, co-occurring with neither speech nor gesture.[1]

Ironically, it has been partly the success of gesture studies in showing the universality of cospeech gesture that has created an environment in which SL linguists can begin to break with the taboo against describing SLs in anything but strictly linguistic terms. If the co-occurrence of what is considered linguistic (discrete, categorical, combinatorial, linear, conventional, hierarchically organized) with what is gestural (analogical, continuous, noncombinatorial, spatial, idiosyncratic, nonhierarchical) is found to be universal among spoken languages, why should it not also be so among SLs? (Duncan 2003).

## 1   The search for gesture in gestural languages

Fortunately, several recent studies of gesture and sign have begun to shed new light on the gesture-sign continuum. Before mentioning these works, however, it will be useful to break open the monolithic box of 'sign language' that appears in the gesture continuum. SLs are not composed of a single stuff; they are composed of a variety of resources, not only proto-typical manual signs (the closest equivalent to 'words'), but also resources quite unlike any that are found in oral languages. By the same token, it will be helpful to list what McNeill includes in his category of gesture at the 'gesticulation' end of his continuum. For McNeill (1992: 12-25), gesture which co-occurs with speech can appear in any one of the following forms: Iconics, metaphorics, beats, cohesives, and deictics. When viewed in this way, the approximation of gesture to sign begins to look not only more feasible but even likely. The descriptions of iconics, metaphorics, cohesives and deictics immediately bring to mind functionally equivalent resources used in SLs. Some of these (notably iconics, cohesives and deictics) will

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[1] In practice, of course, the coarticulation of speech and sign is massively attested. At one extreme is what could be called cospeech sign, in which hearing bilinguals attempt to speak and sign simultaneously for deaf or deaf and hearing audiences. At the other extreme is cosign speech in which deaf SL users articulate words in the oral language as they sign, particularly to non-proficient hearing interlocutors. A review of the extensive literature on these phenomena is beyond the scope of this paper.

not necessarily be produced by the hands and arms, however, but with other parts of the body, suggesting that a study of gesture in SLs will require a broad understanding of gesture to include any 'visible bodily activity' that contributes to the communicative import of an utterance (Kendon 2004: 110) -- with the qualification that it must not be linguistic in nature. If, however, *all* visible bodily activity in SLs proves to be linguistically structured, it will appear that there is a constraint against coverbal gesture operating in SLs that will require explanation.[2] Nonetheless, that is not the direction in which the evidence appears to be falling.

If there are a number of distinct types of gesture that inhabit the gesticulation end of the continuum, there are at least that many signing types compressed into the 'sign language' category at the other end of the spectrum which are apparently used universally in the world's SLs. These resources, as we will show, can be arrayed from the most discrete, conventionalized and fixed of manual signs (which are often indistinguishable from emblems, the most 'linguistic' of gestures) to partially conventionalized signs, to clearly iconic gestures and what is essentially mime (with the exception that there is no performatic requirement to exclude coverbal activity). Some of these forms have names; others are hybrids that we will describe in our analysis section below. Even the forms that have been named will display a great amount of variety and flexibility. The named types in order of 'unruliness', from most well behaved to least, are: Conventional lexical signs (with highly varying degrees of iconicity, from highly iconic to totally opaque or 'arbitrary'); deictic signs (pronouns and indicating verbs, which point at referents in discourse); 'polycomponential signs', which combine conventional handshapes with iconic movements and paths with varying degrees of conventionality; nonmanual signs, notably facial expressions and eye gaze, which have been described as serving grammatical or prosodic functions, but which may also be deictics, iconics or expressive of emotion or attitude; and free pantomime, also called 'referential shift' or 'constructed action', in which the signer 'becomes the object' (usually a character) in order to represent bodily action and attitude using the signer's very own body (Quinto-Pozos 2007). All of these have been attested in a great number of SLs and appear to be common and favored resources used by native and proficient signers. As can be seen, they overlap to some extent, at least functionally, with McNeill's gesture types, and are themselves composed of varying degrees and mixes of linguistic and gestural features, which will become clearer in the course of our analysis.

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[2] We wll use 'coverbal' as generic for oral and signed linguistic systems, as distinguished from 'cospeech' which will refer only to oral language.

As mentioned, a small but growing body of research is beginning to show that the purely linguistic analyses given for certain of these signing resources may not prove to be the most robust, considering the idiosyncratic, analogical and otherwise 'gestural' manifestation of these resources in continuous discourse, particularly in narrative, the object of this study. For example, Liddell (2003a) proposes a series of reanalyses of signing phenomena, applying blending theory to explain the behavior of 'indicating verbs' (blends of conventional signs with deictics), 'depictive verbs' (blends of conventional handshapes with gestural paths, positions and manners), and 'surrogate blends' (blends of 'real space' with 'event space').[3] Schembri (2003) has investigated the dual nature of polycomponential verbs (Liddell's 'depictive verbs') as made up of more conventional and less conventional components and has demonstrated (Schembri et al. 2005) their partially gestural nature by comparing them with nonsigners' gestures without speech. The implication in this type of research is that gestures also produced by hearing nonsigners must result from a common storehouse of communicative resources and therefore must be assigned privileged status as 'signs' or 'grammar' in SLs only with care. Sandler (2009) shows that in Israeli Sign Language, iconic mouth gestures accompany conventional manual signs. With the gestural component in the mouth and the verbal component in the hands, the situation is exactly opposite of what you find in the case of iconic manual gestures that accompany speech in oral languages. Finally, Quinto-Pozos (2007) demonstrates the obligatory nature of constructed action under some conditions, showing that the 'pantomime' that seems to be an ever present feature of narrative in SLs is not felt to be something extra, or optional, but an integral part of signing. That would mean that this most 'gestural' feature of signing that has not yet received a fully satisfactory linguistic analysis is still felt to be an integral part of the language.[4] In this paper, we will argue that Liddell's blending analysis of constructed action is not only adequate but also necessary to account for the data.

Even among those linguists open to the possibility that certain aspects of SLs may end up being gestural in nature, there is a concern for demonstrating the systematicity of SLs, thus distinguishing them from 'mere gesture'. Quinto-Pozos (2007), for example, in investigating the obligatoriness and well formedness of constructed action, is searching for characteristics that are typically associated with linguistic structures, and *not*

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[3] These concepts will be further explained and illustrated as part of our analysis.

[4] For one attempt at fitting constructed action into a generative analysis, see Lillo-Martin (1995). For other analyses more compatible with a 'gestural' interpretation, see Poulin and Miller (1995) and Engberg-Pedersen (1995).

with gesture, as if to show that if gesture is used in sign, it will at least have become domesticated. Part of the unease, perhaps, in allowing gesture to cohabit the same utterances as sign, lies in an indefinition about what might regulate this marriage. If it is true (and it does seem to be true) that not only the more conventionally linguistic, but also the clearly gestural resources of sign are used to heightened effect by native and highly proficient signers, *and* that when thus used, they seem to be more tightly controlled and carefully articulated (Costello et al. 2008), it does seem that some regularization of their use has taken place. Does this result from the operation of linguistic processes? Or might other types of regularization be in play?

Perhaps the problem in identifying the attested regularity behind the fluent use of gesture-like behavior in SLs is that linguists have been looking in the wrong places. So far, the search has been mainly in the arsenal of tools developed for oral languages. Liddell (1995, 2000, 2003a, b) broke new ground by introducing the concept of blending into the grammar of SLs to account for what he considered to be the undeniable presence of gesture in discourse. Wilcox (2004) has been studying the historical behavior of iconicity in gesture, sign, and speech to discover regularities in the formation of iconic grammar. Another place to look may be in the semiotics of visual and spatial communicative practices. As early as 1978, no less a linguist than Charles Hockett was proposing an investigation into what he called 'syntactic dimensionality' to account for the use of spatial and gestural resources by deaf signers (Hockett 1978: 274). Hockett's contemporary William Stokoe, father of SL linguistics, suggested that SLs might well be described using cinematic concepts (Stokoe 1979). This challenge has recently been taken up by Bauman (2003) to describe American Sign Language poetry. The idea is that, if there is a 'grammar of cinema', such a grammar is a reasonable candidate for accounting for some of the regularity to be found in what appears to be gesture in SLs.

In our research on Brazilian Sign Language narrative, we have been persuaded that much of what is going on can be elegantly described in the terminology of cinematography. In narrative, signers use techniques strikingly analogous to such cinematic standbys as 'establishing shot', 'close up', 'shot/reverse shot', and so on. We are not claiming, however, that cinematography supplies the 'missing link' to understanding the gestural regularity of sign. The differences between signing and film are too great to be ignored: Film makes use of information rich photographic (or animated) images collected or produced specifically for the edited final product; it conveys action, but in a two-dimensional frame; typically, the narrator/director/editor of the film does not bodily appear to the audience; it is not produced for simultaneous consumption in real time. These differences suggest that there might also be other reasonable sources from which to

derive visual-gestural grammar. Live theater is a candidate, as is puppet theater. There we have human bodies (or surrogates) performing in sight of an audience, with limited visual resources that require manipulation. Another possibility is live television editing, which uses techniques from cinema, but must apply them in real time to content not necessarily under the director's or editors' control.

In our research, we have been able to juxtapose an input for the narrative that is purely cinematic with an output that is purely signed. In this way, we are able to compare the story information available and its manner of presentation (its 'utterances') with the information presented in the signed rendition. The film chosen was Wallace Chafe's the Pear Film, a film without words produced in the 1970s explicitly for the cross-linguistic elicitation of narrative (Chafe 1980).[5] In doing this, we have unwittingly followed the recommendation of Virve Sarapik (2009), who discusses methods of examining the relationship between image and text. After suggesting two other possibilities -- comparing distinct art fields to find features held in common, and studying unequivocable and distinctive hybrid forms that are neither one nor the other (in her case 'comic strips, caricatures, illustrations, and advertisements') -- she settles on a third, which is 'functional and comparative: to focus on artifacts where word and image exist together, and compare them with similar phenomena that mainly rely on one means of expression, analyzing their different and similar functions in the communication process' (2009: 280). That is what we have done, by comparing a mixed product of verbal (sign) and gestural elements with an analogous version which is wholly visual, without any verbal complement at all, either spoken or signed. Thus we should be able to find clues as to what elements in the filmic version are reproduced visually and gesturally in the signed version, and what elements are verbalized; further, what precise functions the verbal and nonverbal elements exercise within the context of a spatialized recounting.

In the next section, we will describe the data we are using, both the original film and the signed retelling. In the third section we will present a detailed analysis of the verbal and gestural components of the signed version.

## 2   The data

To illustrate the nature of the functional integration of prototypical verbal elements (lexical signs) within the contextualizing mimetic performance of

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[5]The film has now been made available for viewing on YouTube at <http://www.youtube.com/watch?v=bRNSTxTpG7U>. It can also be downloaded from Wallace Chafe's homepage at <http://www.linguistics.ucsb.edu/faculty/chafe/pearfilm.htm>.

the body-in-space, we will analyze parts of a retelling of the Pear Film story signed by a fluent Deaf adult. The data were collected in 2002, according to procedures described in Chafe (1980).[6] For convenience, we will refer to the signed version of the story as the 'signed pear story', to distinguish it from the story as shown in the film. Our analysis will focus on a single sequence of the film, comparing the story as it appears in the film with the story as retold. First, we will describe the film as a whole, then the selected episode in more detail.

The opening sequence of the film begins with an establishing shot of a rural setting and then introduces the protagonist as pear picker, with his ladder, apron, scarf and hat, and his three baskets being filled with pears. This scene is followed by a second (side) sequence in which another farmer passes below the tree leading a goat. In the third sequence, one of the baskets of pears is stolen. This episode will be described in detail below.

The fourth sequence begins with the boy riding his bike along a dirt road with the stolen pears. He passes a girl coming in the opposite direction on a bike, gets distracted, runs into a large rock and tumbles to the ground with his basket of pears. Three friends appear at the scene, help the boy collect the pears and set the basket back on the bike, and then, after a short interlude in which one of the boy's returns the bike boy's fallen hat, walk off in the direction from which the boy came, each carrying a pear. This complex sequence is followed by a return to the opening setting of the film, at the tree with the pear picker. He descends the ladder and notices that one of his baskets is missing. As he ponders the missing basket, perplexed, the three boys walk by eating their pears.

We have retold the story as if the sequences were neatly defined, but the film itself only marks certain of these off clearly, namely the goat man episode and the pear theft episode. Both of these are situated within the setting of the pear picker and his tree. This situatedness is established, filmically, by bracketing all of the activity with shots of the pear man in his tree or with his baskets, and shots which locate the activity near the base of the tree. The remaining sequences, however, are less clearly demarcated. The episode of the accident and getting help is clearly distinct from the remainder of the film, because it takes place in a different setting, along the road in a relatively open field, but it is internally complex, without clear demarcation between the accident, getting help and having the hat returned,

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[6] The volunteer storyteller was thirty years old at the time, had been deaf since the age of three, and was a user of sign from the age of nine. He is an instructor of Brazilian Sign Language in a school for Deaf children in his city and a leader in the Deaf community. He viewed the Pear Film once before videotaping his retelling of the story to one of the authors and another researcher fluent in Brazilian Sign Language.

and closes with a jump cut returning to the area of the tree, where the farmer is discovering his loss. This closing scene hardly constitutes an episode by itself, but does serve to provide coherence to the otherwise rather pointless narrative.

In retelling it this way, we have followed closely the segmentation provided by the narrator in the signed pear story. The goat man episode is bracketed at the beginning by first returning the pear man to his tree, then by returning to rest position as narrator before introducing the goat man. At the end, it is bracketed by gesturing that the goat man has gone off, by making a gesture indicating that the narrator is wiping the story slate clean, and then by returning to rest position as narrator before opening the following episode by reactivating the pear man in his tree. At the end of the theft episode, the narrator also sends the bike boy riding out of the scene, then returns to rest position as narrator, looks down, and scratches his head before taking up the scene in which the accident will occur. This extra planning may reflect the major shift of setting from pear tree to open field. After the accident proper, the transition to the appearance of the threesome of boys is marked only by a rapid narrator glance at the interlocutor, without any discontinuity of action, as is the whole of the episode of the return of the hat. The transition from the boys walking away with their pears to the scene of the pear man and his tree does not even merit the typical instantaneous narrator glance at interlocutor; it is as abrupt as it is in the film. We see in this brief account how the narrator has conveyed the structure of the story as found in the film. In our more detailed description of the pear stealing sequence, below, and in our analysis, we will show in more detail how gesture becomes a central element in recreating the cinematic effect as it was presented in the film.

The sequence in focus, in which a basket of pears is stolen from under a tree, in broad daylight, by a boy passing by on a bicycle while the farmer is distracted overhead with his pear picking, is part of the complicating action (such as there is) of the story.

The filmed sequence of pear theft is made up of three scenes. The first re-establishes the farmer on his ladder in the tree engaged in carefully picking pears and placing them in the pocket of his apron; the second shows a boy on his bicycle winding toward the tree along a path; and the third and longest shows the boy and his bicycle under the tree as he calculates his risks and then loads a basket of pears onto his bike and rides away. Each of the scenes is composed of several shots, edited in such a way as to establish a tension between the pear picker in the tree and the boy immediately below plotting to relieve him of the fruits of his labor.

The first scene is composed of four shots, all of which emphasize the deliberate care with which the farmer is picking his pears within an envelop-

ing canopy of leaves which darkens and obscures our view of his face and movements. The only clear pictures of the man are two insert shots, one of his hand grasping a pear against a solid backdrop of leaves and another of his face in an expression of total concentration. The second scene, also composed of four shots, begins with a shift of focus from foreground (farmer in the tree) to background (the sunny meadow behind the tree) to reveal a boy riding his bicycle along a path. The scene cuts back to the farmer in the tree and then returns to two more shots of the boy winding toward the tree as seen through the ladder. The final and longest scene is composed of seven shots. All but two of them are medium long shots from roughly the same viewpoint showing the boy, his bike (when it is standing), the ladder, and (in the widest of them) the tops of the baskets of pears. In these shots, the boy is stopping, laying down his bike, inspecting the pears in the baskets (he puts his hand on one of the pears), checking on the man in the tree, and then moving an entire basket, picking up his bike, lifting the basket onto his bike, and riding off. The remaining two shots, the fourth and last in the series, are cutaway shots showing a boy's-eye view of the distracted farmer. The first is inserted between two shots showing the boy looking up into the tree, and the last confirms that the boy has ridden off without being noticed.

This is the sequence that our storyteller will have to narrate, relating not only the sequence of events, but also capturing the effect of the farmer's distraction and the excitement of the boy's risktaking as he decides to cart off a basket of pears. All this the storyteller accomplishes with twenty-eight lexical sign tokens, using nineteen unique signs, as follows:

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|---|---|---|---|---|---|
| MAN | CLIMB | NOT-SEE | ANOTHER | MAN | CHILD |
| YOUNG | RIDE-BIKE | SEE | PEAR | TASTY | DESIRE | TAKE |
| LOOK | MAN | NOT-SEE | MAN | PICK-PUT | NOT-LOOK |
| NOT-SEE | PICK-PUT | THERE | MAN | BIKE | THINK | I |
| GRASP | RIDE-BIKE | | | | |

Obviously, much is missing from the lexical account. Yet, the story as enacted by the storyteller is remarkably -- even eerily -- similar to the filmic account. Any running interpretation of the retelling (or careful translation) would require scores of words. How is this accomplished?

While it is clear that the gestural component in sign language narrative is doing much of the work, it is equally clear that this is not just acting out. It is not mime. There are crucial ways in which the reduced verbal component contributes to the interpretation of what is going on gesturally. The two components mutually contextualize one another.

## 3  Analysis

As mentioned above, there have been several recent attempts to describe the function and grammar of a massively recurrent phenomenon variously called role shifting, role switching or referential shift (Poulin and Miller 1995; Engberg-Pedersen 1995). This is a phenomenon in which part of the signer's body moves in such a way as to iconically represent the body of a human character or other participant in a narrative. Liddell (2003a) has provided an elegant account of role shifting in terms of mental space blends (Fauconnier and Turner 2002) in which a role shift creates a 'real-space blend' he calls 'surrogate space'. In Liddell's work, 'real space' is the term used to refer to the mental space built from our immediate sensory-perceptual experience of our current situation, plus our knowledge of the world. It is a conceptualization of the enunciative setting, including conceptualizations of the people, objects and empty space around us.

Surrogate spaces, or surrogate blends, result from the integration of real space with an event space, a space which contains a conceptualization of the "world of the story" (Oakley 1998: 329), with its participants, objects, actions and settings. From real space, surrogate blends inherit the signer's body, parts of which conceptually integrate with the participants in the event space, to represent their actions, thoughts, or speech. Thus, through blending, the signer's body becomes a surrogate of someone or something from the event space. Surrogates may be present visibly (as manifest in the signer's body), or invisibly, as evidenced by the fact that signs may be directed toward them. As surrogate, the narrator can use facial expressions and gestural and mimetic demonstrations to enact an event. This use of surrogates is called 'constructed action' by Liddell, following Winston (1991) and Metzger (1995). Constructed action is not a direct copy of a certain character's action; it is that action as constructed by the narrator.

As Liddell points out, surrogate blends are not foreign to oral language discourse. When describing the location of objects, for example, speakers often create spatialized representations in real space in order to then use a combination of language and gesture to give a detailed description of the object's location. These blends may include objects in real space, such as cups and pens, or imaginary lines drawn on table tops. Liddell observes that the use of such blends in oral language discourse, and the combination of language and gesture used in relation to the blend, is very efficient. When blends of this kind are not created, and when language alone is used, the linguistic effort required to express target locations and spatial relationships is substantially greater (Liddell 2003a: 150).

In SLs, as we will see, surrogate blends are not only a useful resource for spatial representation per se, but are fundamental both for the construc-

tion of content meaning, and for the organization of discourse proper. At the same time that they provide a (partial) visual demonstration of the events being described, they help in the structuring of the signing space, thus preparing a topology that can be used to establish grammatical and discourse relations, such as discourse cohesion and coherence, coreference, shifts of attention frames, temporal and cause-effect relations, and narrative voices and viewpoints.

It might seem (and this would be in accord with Liddell's analyses of surrogates) that the signed pear story must be a blend of the real space of the signer and the 'event space' created by the film version of the story, which the signer has conceptualized as a result of having viewed it.

For our purposes, it is necessary to alter this arrangement. It is clear that, in narrating the story, the signer assumes a role of narrator. This can be seen at the beginning of the narration by comparing the relaxed body of the signer, as the camera is being readied, to the upright, tensed body of the narrator, as he prepares to begin. From this point on, the signer is signaling that his utterances are to be understood as story-building (rather than as belonging to the signer). We will consider this shift to |narrator|[7] as being also the result of a real space blend, which we will call 'narrator space'. At the end of the narration, the signer will undo the narrator blend and return to his role simply as signer/collaborator/friend, indicated by his relaxed body posture and facial expression. In the narrator blend, the signer's body (or parts of it) will stand in as surrogate for the narrator, as distinct from the signer, who is able to also sign or gesture from outside his role as narrator.

We have said that narrator space is a real space blend, such that one of its inputs is real space. But what is the second input? We propose that the narrator space is a simplex network in which one of the inputs is a narration frame containing the roles of narrator, narratee, story, and accompanying cultural expectations (Fauconnier and Turner 2002: 120-122). In the blend, the signer is projected from the enunciation space as the value of the narrator role.[8]

Given the existence of the narrator blend throughout the signed pear story, the story space created by the narration can be best understood as a multiple blend, in which the story slot in the narrator blend is elaborated by the event space that originates with the viewing of the Pear Film.

From the event space, the signed pear story space inherits a broad setting (a pear orchard and its surroundings), a narrow setting (the space around a pear tree), several characters (the pear man, the bike boy, the goat

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[7]Following Liddell, we will use the symbols | | to refer to surrogates.
[8]The narration frame appears to be close to what Oakley (1998: 329) has called 'storytelling space'.

man, the girl, the threesome)[9], some objects (three bushel baskets, pears, a ladder, a bicycle, etc.), and the actions performed by the characters.

The pear stealing episode is organized around the activities of two characters (the pear man and the bike boy) and the |narrator|. The |narrator| is free to function either as the |narrator| himself, or as a blend with one of the characters in the story. He may even lend part of his body to function as the surrogate of a thing, as we will see below.

The signing space is organized as follows: the |narrator| is conceptualized in what is called the neutral signing space, that is, the space immediately in front of the signer's body. In this segment of the narrative, mimicking the film itself, the |pear man| is constructed above and to the right of the signer's body (since the |pear man| is conceptualized as having climbed a ladder to pick pears), and the |bike boy| is conceptualized to be below, on ground level and to the left, where the |bushel baskets| had been conceptually placed in a previous segment of the narrative.

The |pear man|, the |pear tree|, and the |pear man's paraphernalia|), which had been created at the beginning of the narrative, are reactivated at the outset of this sequence by the narrator's initial utterance, thus becoming readily accessible for use in this segment. The utterance includes three signs (MAN CLIMB NOT-SEE) and an iconic gesture that symbolizes a tree. This one utterance illustrates the gray area between sign and gesture mentioned earlier. Of the three signs, the only simple conventional sign is MAN. The two verbs, CLIMB and NOT-SEE, both involve a gestural and a linguistic component.[10] The gesture that symbolizes a tree in this utterance is part of the sign TREE, in Brazilian Sign Language. Prototypically, TREE is signed with both forearms, one in vertical position, with an open hand initially oriented to the front, the other in horizontal position, with the palm of the hand facing down. The elbow of the arm in vertical position lightly touches the tips of the fingers of the hand in horizontal position. The vertical forearm rotates, so that the palm ends up facing back. What is used in the utterance that starts the pear stealing sequence is just one forearm in vertical position, with the palm oriented to the side. This gesture, which out of context would be meaningless, in context clearly stands for the surrogate |pear tree|. The sign CLIMB is directed toward this surrogate, conceptualizing an event of *climbing a tree*.

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[9]These labels are standard names given to these characters in Du Bois (1980: 207).

[10]NOT-SEE, an indicating verb, will be described later. CLIMB is an example of a poly-componential verb. See the discussion of TAKE below, and also the discussion of PICK-PUT.

The |narrator| then creates the |bike boy| with the utterance of four signs (ANOTHER MAN CHILD YOUNG)[11] and a hybrid expression (RIDE-BIKE), which combines sign and gesture. In Brazilian Sign Language, BIKE is an iconic sign that represents the two hands holding a bicycle's handlebars, with the arms making "pedaling" movements. In the story, while signing BIKE, the |narrator| moves his body rhythmically from side to side, accompanying the circular motion of his "pedaling" arms to mimic the characteristic movement of bike riding. As the |narrator| is signing RIDE-BIKE in this manner, his eye gaze and facial expression shifts from the neutrality of narrator to a joyful expression of someone taking in the landscape. In this way, the surrogate |bike boy| is created as not only a character in the story, but as a presence in the story space. This is a typical example of how a sign can be incremented by constructed action to create surrogates and to add expressive content.

In the next action of the |bike boy|, the |narrator| makes use of the surrogate that has just been created, producing a pantomime that enacts the |bike boy| stopping his bike. As the |bike boy| approaches the action of stopping the bike, the |narrator| uncrosses his legs, and then 'stops the bike' by lifting both heels off the floor and clicking them down sharply, while simultaneously raising his shoulders, arms and hands, now representing the |bike boy| gripping his |handlebars|. At this point, the |narrator|'s body has fully become a surrogate for the boy, and his downward gaze symbolizes the |bike boy| eyeing the |bushel baskets| that had been conceptually placed in the space below the tree in previous scenes. Only now does the voice of the narrator utter the signs SEE PEAR TASTY DESIRE TAKE, thereby confirming the interpretation that had been construed by as a result of non-verbal cues alone.

TAKE is also a hybrid element of the kind known in traditional SL linguistics as 'classifier', but more recently called polycomponential verbs, (Schembri 2003), depicting verbs (Liddell 2003a, b), or polycomponential signs (Quinto-Pozos 2007). These signs are intrinsically iconic and seem to be formed by more than one meaningful component. In the case of TAKE, for example, the hand configuration would represent the shape of the object taken, and the movement of the hand would represent the direction and manner of the action. The status of these meaningful components as morphemes is a matter which has generated much debate, basically because these components are not meaningful per se: They acquire meaning when they are put together, and when they are used in a particular context.

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[11]The sign for MAN is used as a generic to mean 'male', in this case referring to the boy, described here on first mention with the attributes of 'child' and 'young'.

While this sequence of words is being signed, the |bike boy|, with his eyes still looking down, adopts a facial expression that shows he is up to no good. The |narrator| has partitioned his body: His right hand is signing to express the narrator's voice; his left hand keeps the iconic shape of a hand holding the handlebars of the bike; and his eyes and facial expression represent the boy. Body partitioning is a concept introduced by Liddell (2003a: 153-154), who observed that signers are only partially mapped onto characters in surrogate blends.[12] If this were not the case, we would inter-pret the utterance SEE PEAR TASTY DESIRE TAKE as being signed by the |bike boy|, and not the |narrator|. This is clearly not the case. The boy is looking at the pears and feeling a desire to taste them. He is not *saying* that. Here we see a type of constructed action we will call 'constructed thought'. Within the surrogate blend, the |narrator| is not only able to represent the surrogate's state of mind with gestures and facial expression; he is also able to articulate in sign what the surrogate is thinking: DESIRE TAKE.[13]

From this brief description, we can already see many of the intricate relationships that hold between the verbal and non-verbal elements that make up SL discourse. They work jointly to construct both meaningful content and grammatical relations. The introduction and reactivation of surrogates in the discourse space rely on:

- the use of lexical signs (ANOTHER MAN CHILD YOUNG);
- manual gestures (the iconic gesture that reactivated |the pear tree|);
- eye gaze shifts (when the |narrator| looks down at the |bushel baskets|);
- pantomime (when the |narrator| mimics the action of stopping the |bike|); and
- facial expressions (when the |narrator| adopts a mischievous look that mimics the look of the boy in the original film).

Things. relations, and attributes are also expressed by both verbal and non-verbal elements. We find signs expressing things (MAN, CHILD, PEAR, DESIRE); relations (CLIMB, NOT-SEE, SEE); and attributes (YOUNG, TASTY). At the same time, we also find gestures (including body posture and facial expressions) expressing things (the gesture that symbolizes the |pear tree|); relations (the pantomime that represents the stopping of the bike, the |narrator| looking down at the |bushel baskets|, the side to side body movement that is part of RIDE-BIKE, the iconic hand-shapes and movement that constitute TAKE); and attributes (the mischievous boy).

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[12]Body partitioning was further explored in Dudis (2004).

[13]We suspect that this form of constructed thought is akin to free indirect discourse in oral languages.

In terms of sentence grammar, the same conspiracy between the verbal and the non-verbal occurs. In an utterance like MAN CLIMB NOT-SEE, the sign MAN clearly elaborates the trajector of the verbs CLIMB and NOT-SEE. However, in an utterance like SEE PEAR TASTY DESIRE TAKE, the trajector of the verbs SEE and TAKE can only be interpreted as being the |bike boy|, a surrogate that is not codified by any manual sign, but which was created and placed in the signed pear story space by gestures and facial expressions.[14] Furthermore, if we consider how the pantomime of stopping the bike would be expressed in any oral language (as a sentence such as *He stopped his bike*), we see that, in Brazilian Sign Language, pantomime can stand for entire propositions which are essential to the conceptualization of the story.

Returning to the unfolding of the narration of the pear stealing episode, the |bike boy|, still with the same mischievous expression on his face, and holding the |pear| he had taken from the |basket|, turns his head to the right and upward, to look at the |pear man|. At this point, the |narrator| signs LOOK MAN NOT-SEE, corroborating the meaning that had already been built by body posture and facial expression. Verbal and non-verbal elements together cooperate to reactivate discourse referents and to construct meaning. Once again, the signer's body has been partitioned: The right hand is signing to express the |narrator|'s voice; the body posture and facial expression are representing the |bike boy|. The trajector of the verb LOOK is interpreted as being the |bike boy|, a surrogate that is present in the signed pear story space but which is not codified by any verbal element.

The next segment shows a complex narration technique that opens another window of attention, profiling new characters and activities, while leaving the information associated with previous actions in the base. With his head still turned to the right and upward, the |narrator| closes his eyes and signs MAN, indicating that he is no longer going to lend his body to the |bike boy|. From that moment on, his body will be mapped onto the |pear man|. He turns his torso to the right, changes his facial expression to show that he is now the |pear man|, oblivious to what is going on by the |bushel baskets|. He repeats the iconic gesture that symbolizes the |pear tree|, and signs PICK-PUT NOT-LOOK NOT-SEE PICK-PUT.[15] Once again, the

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[14]Even in treatments that propose the existence of null pronouns like *pro,* it would be difficult to account for the identification of its referent without admitting that it is the presence of the surrogate that allows for its interpretation.

[15]The signs PICK and PUT are both polycomponential signs that have been used since the beginning of the story. They consist of a cupped hand reaching for an object and carrying the object to a particular location, respectively. The exact size and shape of the cupping of the hand is determined by the conceptualized object. The location of picking and putting is given by the constructed context. When they were first employed, the context of use was made

|narrator|'s body has been partitioned: His body and facial expression symbolize the |pear man|; his hands sign as the |narrator|.

This sequence of signs is particularly interesting in that it shows how much the organization of discourse in SLs relies on gestures and on the organization of the signing space.

The sign NOT-LOOK is a type of sign known as a 'directional verb' or 'agreement verb'. Liddell (2003a) prefers to use the label 'indicating verbs' to refer to verbs of this kind, precisely because they are deictic verbs. They can be meaningfully directed in the signing space to point at places, objects, and people. These verbs are hybrid: they have a fixed semantic meaning, but the mapping of their trajectors and/or landmarks varies according to the discourse situation and to the organization of the signing space. In the case of the signed pear story, the sign NOT-LOOK is directed downward to where the |bike boy| and the |bushel baskets| have been conceptualized. The |narrator| does not need to elaborate the landmark of the verb NOT-LOOK by means of any verbal element. The directionality of the verb movement takes care of that.

The sign NOT-SEE is also an indicating verb. It is usually made by an up-and-down movement of the palm in front of the signer's eyes. In the pear stealing sequence of the signed pear story, it is signed on the left side of the |pear man|'s face to show that what he cannot see is not what is conceptualized as being in front of him (the |pear tree|), but what is on his left (the |bike boy|).

At the same time that the signed utterance MAN PICK-PUT NOT-LOOK NOT-SEE PICK-PUT describes the activities of the |pear man|, the |narrator|'s body posture, facial expression and gestures reinforce and complement that description, adding information regarding the position and attitude of total concentration of the |pear man|.

Immediately after this utterance, the |narrator| relaxes his posture, turns to the front and directs his eye gaze toward his interlocutor, showing that his body no longer symbolizes the |pear man|: Now he is simply the |narrator|. He signs THERE MAN BIKE THINK. By signing THERE, he proposes that we shift our attention back to the |bike boy|. THERE is a deictic pronoun that is realized as a pointing gesture. The |narrator| points down, toward the place where the |bike boy| is in the blend. Still looking down, he signs MAN. His facial expression is already changing to take on again the

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explicit by constructing the scene of the |pear man| in the |tree|, picking |pears|, with |pears| identified by a lexical sign. Even under these conditions, the motion of picking pears and putting them in the |pear man|'s |apron pocket| was clearly a gesture meaningful only in that setting. At the current point in the story, PICK-PUT has become reduced to a mere suggestion of motion that retains very little of either the signs themselves or the iconic gesture.

|bike boy|'s mischievous smile. When he signs BIKE, he looks up toward the |pear man|. From this moment on, he is clearly the |bike boy|. To reactivate the |bike boy|, the |narrator| uses gestures (he points at the conceptual space associated with the |bike boy|), signs (MAN BIKE), and body posture and facial expressions (he takes on the facial expression and body posture the |bike boy| had earlier). These shifts from the activities of the |bike boy| to those of the |pear man| and back to the |bike boy| establishes a temporal relation between them; that is, while the |pear man| is up in the tree working, the |bike boy| is thinking about stealing his |pears|. This alternation of shots from |bike boy| to |pear man| and back exactly mimics the cinematic technique of cutaway shots found in the input.

THINK is signed by the |narrator| while the |bike boy| assumes a facial expression of someone who had a great idea. THINK and the facial expression of having an idea work together as space triggers: The |narrator| indicates that a new mental space, that of the |bike boy|'s thought, is going to be built. The next sequence is I GRASP. This is the only time we see the voice of a character: It is the |bike boy|'s constructed thought. The pronoun I is a pointing gesture, directed toward the enunciator's body. We know that I refers to the |bike boy| because it is being uttered from the mental space of the |bike boy|'s thought, by someone who has the facial expression and body posture of the |bike boy|. GRASP is another example of a polycomponential sign. It iconically represents the action of someone picking up something. We know that it is one of the |bushel baskets| that is being picked up because of both the discourse context and the organization of the signing space. The |bike boy| is looking down to the place where the |bushel baskets| had been conceptualized.[16]

The next three 'shots' show a sequence of gestures and pantomime that describe the actions of the |bike boy| picking up one of the |bushel baskets| and putting it on his |bike|. During the three shots, the |bike boy| is looking down. In the first one, the |narrator| makes a circular movement with his two hands facing each other to represent the borders of a basket. In the second, the |bike boy| makes a gesture that represents someone picking up an object that has roughly the size of a bushel basket. In the third shot, we see the |bike boy| making a gesture that iconically mimics the movement of someone raising a heavy object. His tongue is out, showing that he is

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[16]During the signing of THINK, I, and GRASP, the |narrator|'s left hand keeps the same shape and position it had when BIKE was signed. It is a gesture of someone holding a bike's handlebars. The function of this gesture is one more way of showing that the focus of attention is on the |bike boy|.

having to exert force to make the movement. The denouement of the pear stealing segment is all gestural.[17]

The next shot shows the |bike boy| with a happy expression on his face while the |narrator| signs RIDE-BIKE. And, finally, the |narrator| looks at his interlocutors, his left hand still positioned as if holding a handlebar, and makes a gesture that resembles an object disappearing in the distance, meaning that the |bike boy| rides off.

## 4   Discussion

In recent years we have seen an increased interest in gesture by oral language linguists which has not been replicated in the SL linguistic community. We believe that this is due to the fact that in oral languages, gesture may accompany speech without invading the realm of language proper. This independence of the verbal from the nonverbal could well be, as Hockett suggested, the result of the necessity of channeling information through a one-dimensional linear medium, with the result that 'most icon-icity is necessarily squeezed out' (1978: 275). Because of linearity and the inability to make use of the rich expressive resources of the acting body in space, oral languages have necessarily had to evolve resources which permit communication without them.

In SL linguistics, the situation is different. Up to the present, gesture has been viewed as a threat to the integrity of the linguistic system. As a consequence, SL linguists have concentrated on finding those same 'autonomous' characteristics in SLs which are found in oral languages. Only in the last decade have some SL linguists begun to overcome this bias to investigate the gestuality of SLs as a virtue, as Hockett so perceptively suggested forty years ago.

Our study has aimed to contribute to this new trend in SL linguistics by highlighting the complex array of integrated resources that signers make use of in producing richly informative, grammatically cohesive, and artful texts. By analyzing a scene in a signed narrative, we have shown how gestures and verbal elements of varying degrees of conventionality work tightly together to mutually catalyze their expressive potentials. Neither gesture alone nor lexical signs alone would be able to produce the kind of discourse sophisti-cation that we have seen. In addition, we have suggested that we can find grammar in the very gestuality that seemed to be such a threat, if by grammar we understand patternings like those found in other visual and

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[17]Here the |narrator| shifts smoothly from constructed thought to constructed action. The moment in which the |narrator| 'draws' the rim of a basket in space seems to be the turning point between thought and action.

spatial semiotic systems. SL linguistics would do well to study these systems to understand how they may be organizing the conceptualization of visual and gestural elements and making possible the formation of a symbiotic ecology in which both gesture and sign are equal partners.

# References

Bauman, H-D. L. 2003. Rede*signing* literature: The cinematic poetics of American Sign Language poetry. *Sign Language Studies* 4 (1): 34-47.

Chafe, W. L. 1980. *The Pear Stories: Cognitive, cultural and linguistic aspects of narrative production*. (Advances in Discourse Processes, 3.) Norwood, NJ: Ablex.

Costello, B., J. Fernández, and A. Landa. 2008. The non-(existent) native signer: Sign language research in a small deaf population. *TISLR9. Sign Languages: Spinning and unraveling the past, present and future*, ed. R. M. de Quadros. Petrópolis, RJ: Editora Arara Azul, Brazil. Available at <http://www.editora-arara-azul.com.br/ebooks/catalogo/complete.pdf>.

Du Bois, J. W. 1980. Beyond definiteness: The trace of identity in discourse. *The Pear Stories*, ed. W. L. Chafe, 203-274. Norwood, NJ: Ablex.

Dudis, P.G. (2004). Body partitioning and real-space blends. *Cognitive Linguistics*, 15(2): 223-238.

Duncan, S. 2003. Gesture in language: Issues for sign language research. *Perspectives on classifier constructions in sign language*, ed. K. Emmorey, 259-268. Mahwah, NJ: Lawrence Earlbaum Associates.

Engberg-Pedersen, E. 1995. Point of view expressed through shifters. *Language, gesture and space*, ed. K, Emmory and J. Reilly, 133-154. Mawah, NJ: Lawrence Erlbaum Associates.

Fauconnier, G. and M. Turner. 2002. *The way we think: Conceptual blending and the mind's hidden complexities*. New York: Basic Books.

Hockett, C. F. 1978. In search of Jove's brow. *American Speech* 53 (4): 243-313.

Kendon, A. 1980. Gesticulation and speech: Two aspects of the process of utterance. *The relationship of verbal and nonverbal communication,* ed. M. R. Key, 207-227. The Hague: Mouton.

Kendon, A. 2004. *Gesture: Visible action as utterance*. Cambridge: Cambridge University Press.

Liddell, S. K. 1995. Read, surrogate, and token space: Grammatical consequences in ASL. *Language, gesture and space*, ed. K, Emmory and J. Reilly, 19-41. Mawah, NJ: Lawrence Erlbaum Associates.

Liddell, S. K. 2000. Blended spaces and deixis in sign language discourse. *Language and gesture*, ed. D. McNeill, 331-357. Cambridge: Cambridge University Press.

Liddell, S. K. 2003a. *Grammar, gesture, and meaning in American Sign Language*. Cambridge: Cambridge University Press.

Liddell, S. K. 2003b. Sources of meaning in ASL classifier predicates. *Perspectives on classifier constructions in sign language*, ed. K. Emmorey, 199-220. Mahwah, NJ: Lawrence Earlbaum Associates.

Lillo-Martin, D. 1995. The point of view predicate in American Sign Language. *Language, gesture and space*, ed. K, Emmory and J. Reilly, 155-170. Mawah, NJ: Lawrence Erlbaum Associates.

McNeill, D. 1992. *Hand and mind: What gestures reveal about thought*. Chicago and London: The University of Chicago Press.

Metzger, M. 1995. Constructed dialogue and constructed action in American Sign Language. *Sociolinguistics in deaf communities*, ed. C. Lucas, 255-271. Washington, DC: Gallaudet University Press.

Oakley, T. V. 1998. Conceptual blending, narrative discourse, and rhetoric. *Cognitive Linguistics* 9 (4): 321-360.

Poulin, C. and C. Miller. 1995. On narrative discourse and point of view in Quebec Sign Language. *Language, gesture and space*, ed. K, Emmory and J. Reilly, 117-131. Mawah, NJ: Lawrence Erlbaum Associates.

Quinto-Pozos, D. 2007. Can constructed action be considered obligatory? *Lingua* 117: 1285-1314.

Sandler, W. 2009. Symbiotic symbolization by hand and mouth in sign language. *Semiotica*, 174: 241-275.

Sarapik, Virve. 2009. Picture, text, and imagetext: Textual polygoly. *Semiotica* 174: 277-308.

Schembri, A. 2003. Rethinking 'classifiers' in signed languages. *Perspectives on classifier constructions in sign language*, ed. K. Emmorey, 3-34. Mahwah, NJ: Lawrence Earlbaum Associates.

Schembri, A., C. Jones, and D. Burnham. 2005. Comparing action gestures and classifier verbs of motion: Evidence from Australian Sign Language, Taiwan Sign Language, and nonsigners' gestures without speech. *Journal of Deaf Studies and Deaf Education* 10 (3): 272-290.

Stokoe, W. C. 1979. Syntactic dimensionality: Language in four dimensions. Paper presented to the New York Academy of Sciences. [Cited in O. Sacks, 1990, *Seeing voices*. New York: Harper Perennial.]

Wilcox, S. 2004. Cognitive iconicity: Conceptual spaces, meaning, and gesture in signed language. *Cognitive Linguistics* 15 (2): 119-148.

Winston, E. 1991. Spatial referencing and cohesion in an American Sign Language text. *Sign Language Studies* 73: 397-410.