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Sign + Gesture = Speech + Gesture?

Comparing Aspects of Simultaneity in Flemish Sign Language to Instances of Concurrent Speech and Gesture

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1. Introduction: definition of gesture and aim of this contribution

The starting point for this paper is simultaneity, particularly manual simultaneity, as observed in Flemish Sign Language (VGT). VGT is used

by approximately 6000 signers living in Flanders, in the northern part of Belgium. Research on this signed language began circa 1990 and initially the focus was on descriptive work with the aim of describing and documenting a wide variety of grammatical structures and mechanisms with regard to form and use. As part of that work, dominance reversals and simultaneity were investigated (see e.g. Vermeerbergen 1996; 1997; 2001).

From the examples and discussions in the international signed language literature, it becomes clear that many – if not all – of the structures found in Flemish Sign Language are also described as occurring in various other signed languages. Many of these structures are discussed in detail elsewhere in this volume, which is why we have decided not to present a full account of a wide range of simultaneity and dominance reversals in VGT here. Instead, we concentrate on a smaller range of structures and on the hitherto less discussed topic of the (possible) parallels between the simultaneous use of different articulators by signers and the simultaneous use of speech and manual gestures by speakers.

In modern gesture research the term ‘gesture’ refers to a wide variety of hand and arm movements. Kendon (1988) describes and categorises various types of manual gestures, which has led McNeill (1992) to establish a continuum distinguishing between co-speech gestures (or ‘gesticulation’) and other types of manual activity. He calls this continuum ‘Kendon’s continuum’.

Gesticulation → Language-like Gestures → Pantomimes → Emblems → Sign Languages

McNeill (2000) points out that Kendon's continuum can actually be subdivided into four continua, on the basis of specific characteristics of these gesture types, such as their relationship to speech, their conventionality (or lexicalisation), their semiotic character, and the presence of linguistic properties. Leaving aside the elaborate 'gesture systems' that constitute signed languages, McNeill makes a useful distinction based on the conventionality of gestures. On the one hand, there are conventional gestures with a fixed and conventional form, generally called 'emblems'. Examples are the 'OK' and the 'thumbs up' gestures. On the other hand, there are unconventional gestures "that are created spontaneously by the speaker during the act of speaking and adhere to no standards of form" (McNeill 1998:12). Four types of nonconventional gestures are recognised: iconics, metaphorics, deictics and beats.

In order to facilitate the comparison between certain simultaneous structures in VGT and the simultaneity of speech and gesturing, it is necessary to point out some properties of co-speech gestures as characterised in the gesture literature. Firstly, all authors agree on the close relationship between speech and gesture in communication. Speech and gestures are produced synchronously and are semantically and pragmatically co-expressive. In many cases co-speech gestures illustrate the spoken utterance, but very

often the gestures present different aspects of the meaning expressed in discourse, by adding specific information to a linguistic expression or by providing meanings other than those expressed in speech. For these reasons, gesture researchers consider speech and co-speech gesture as "two aspects of a single process" (Kendon 1997:111; cf. also McNeill 1992; Goldin-Meadow 2003).

Secondly, while gesture is acknowledged as being co-expressive with spoken utterances, it is said to be structured in a wholly different way from language. Unconventional co-speech gestures are global and synthetic (e.g. McNeill 1992). In linguistic expressions, small meaningful parts (such as morphemes and words) combine to create greater wholes (such as sentences), whereas, according to McNeill (1992:19), the direction in gesture is from "whole to part": "The whole determines the meanings of the parts (thus it is 'global')." Moreover, gestures are synthetic, in that they combine different meaning elements, which in speech would be represented in an analytical and segmented way. McNeill (1992:21) further considers gestures to be non-combinatoric, which means that gestures do not combine to form larger, more complex structures.

Following McNeill (and others, e.g. Gullberg 1998), spoken language may be viewed as an expression of thought by means of two distinct representational systems: speech tends to be categorical, arbitrary and conventionalised, while gesture is mostly gradient, iconic, and synthetic.

This view on spoken language communication raises questions as to whether – and if so how – this can be applied to signed language communication. In signed languages, the manual channel 'takes over' from the oral modality – with the result that language 'moves' from the mouth to the hands. Theoretically, this may result in the gesture being 'pushed aside' and disappearing. Indeed, in an important part of the signed language literature, it seems to be taken for granted that there is no room for gesture in signed language use. We would like to argue here that gesture does not disappear. Again in theory, there are three possible outcomes that arise when the hands take over from the mouth: (1) gesture and sign come to co-exist in the manual modality; (2) gesture and sign are integrated into one structure; (3) gesture and 'speech' trade places, resulting in the manual articulators producing the linguistic component and the mouth producing the gestural component of a message.

In Flemish Sign Language, these three theoretical possibilities seem to be realised. In part 2 of this paper we will begin by briefly discussing both the integration of sign and gesture and provide some examples of a 'gesturing mouth'. Most of the chapter will however be devoted to the first of the above-mentioned possibilities, i.e. the possible co-production of sign and gesture in signed language use. In line with the focus of this volume we will concentrate on the simultaneous use of the two *manual* articulators. Three different simultaneous constructions that frequently occur in VGT and other

signed languages, will be considered in part 3 of this chapter: (1) simultaneous constructions involving the use of a numeral sign; (2) simultaneous constructions involving pointing signs, and (3) examples where a lexical sign is 'held' on one hand, while the other hand produces gesture. In all three cases we first extensively discuss VGT examples in order to facilitate cross-linguistic comparison with data presented elsewhere in this volume. After that, these constructions are compared to speech+co-speech gesture combinations which at first sight seem similar. The aim here is to explore whether some examples of manual simultaneity might be (to some extent) equated to speech-with-gesture as produced by speakers of oral languages and whether these then can be analysed as combinations of a linguistic (sign) component and a gestural component.

The topic of this paper is on the interface between sign linguistics and gesture research. As signed language researchers, we approach this issue from the perspective of sign linguistics. This implies that there will be some imbalance between the 'two sides of the story'. First, the discussion of Flemish Sign Language is based on the analysis of examples selected from a relatively large corpus of data that has been used in a number of previous studies on aspects of the linguistics of VGT, whereas the gesture examples are taken from the literature or from personal, unsystematic observations. Second, especially in section 3, the discussion concerning simultaneity in

Flemish Sign Language will be more extensive compared to the discussion of related constructions used by speakers of a spoken language.

2. Gesture integrated and gesture having 'moved out'

2.1 Gesture integrated

Some recent publications on signed languages have related properties of signs and signed language grammar to gesture. Liddell (2003a), for instance, argues that the use of space in 'spatialised syntax' is not linguistic in the strict sense. He analyses spatially modified signs in American Sign Language as being composed of a linguistic part, expressed by the handshape, the type of movement and certain aspects of the hand's orientation, and a gestural part relating the sign to a locus, i.e. an area or 'direction' (cf. Engberg-Pedersen 1993) in the signing space used to represent a locus.

Especially with respect to so called 'classifier constructions', researchers also more frequently consider the possibility of dealing with mixed forms, i.e. structures involving both linguistic and non-linguistic components (Schembri 2002; Liddell 2003a; 2003b; Schembri, Jones & Burnham 2005). Schembri et al. (2005) report on a study comparing the representation of

motion events by sign-naive gesturers and by native signers of three different signed languages (American Sign Language, Australian Sign Language and Taiwan Sign Language). This study reports that the classifier constructions in the three signed languages compared are strikingly similar, and notes that the motion events produced by the hearing gesturers also correspond in a significant way with the signed constructions. Moreover, in both cases, the location and movement are alike and the handshape component shows most differences. These data are consistent with the claim that classifier verbs of motion and location are blends of gestural and linguistic elements (Liddell 2003a). Schembri et al. (2005:287) conclude that

> there is a need for all serious scholars to rethink assumptions about the relationship between signed languages and gesture, and to seek further evidence of the extent to which movement and location in classifier constructions may be grammaticalized gestures, or whether they involve blends of linguistic and gestural elements.

2.2 Gesture on the mouth

In some signed utterances the mouth seems to produce the gestural component of the message. When describing a picture showing a truck

towing a car, one VGT signer imitates the sound of a truck while producing the sign TRUCK. In another example a signer refers to the sound of running water by means of an ffffff-sound when producing the sign construction meaning 'fill-with-water-from-tap'. Goldin-Meadow (2003:207) writes: "Several years ago, David McNeill and I, convinced of the importance of gesture to all human languages, including sign languages, speculated that mouth movements might be serving a gestural function for signers." She refers to Sandler's (2003) description of how the mouth works in Israeli Sign Language. Sandler (2003:398-403) presents an overview of the variety of linguistic tasks the mouth performs and discusses examples of the mouth producing gestures. She claims that all these mouth gestures are iconic, "representing some physical aspect of an object or event" (2003:399). Interestingly, one of the three examples she considers is similar to the 'water running' example from VGT. When signing an utterance meaning 'he emptied the water out of the pool', the signer creates "friction as the air passes through the constricted lips, and represents the draining water through a small opening" (2003:400). Sandler claims that this mouth gesture complements the signed message, just like manual gestures may be used to complement messages conveyed in speech. She also points out that mouth gestures often accompany classifier constructions, which is an interesting observation and can be related to the above-mentioned discussion concerning the status of the component parts of classifier constructions.

3. Sign + gesture, one hand for each?

3.1 'Enumeration'

3.1.1 Enumeration in Flemish Sign Language

Previous work on manual simultaneity in VGT (Vermeerbergen 1996; 2001) includes examples of 'enumeration' (Miller 1994a; 1994b) or 'digital enumeration' (Pinsonneault & Lelièvre 1994). These examples involve the use of a numeral handshape, usually produced by the non-dominant hand, in which (the fingertip of) each extended finger is associated with one referent, all referents together forming a list or an ordered set. The fingertips of the extended digits of the numeral hand are thought of as representing or 'becoming' the referents discussed. As such, enumeration may be compared – be it not in all respects, cf. Liddell (1990:191-192) – to the establishment and use of loci in the signing space.

In Flemish Sign Language, the numeral handshape can disappear immediately after the items in the list have been identified, but more often the handshape remains in place and items on the list are referred to in the subsequent discourse; in VGT this is most often done by touching or tapping the relevant fingertip, although pointing at it is also possible.

Sometimes the numeral handshape disappears but becomes re-activated later in the discourse.

Vermeerbergen (2001:78) mentions the following example of enumeration (see the appendix for transcription conventions). Here, the signer talks about three children from the same family. She first signs the clause HAVE THREE CHILD followed by the numeral handshape THREE. She then lists the three children and goes on to indicate which child is deaf.

(1)

Right hand: indexfinger-touches-D1-
Left hand: HAVE THREE CHILD THREE-LIST----------

Right hand: L-hand SON indexfinger-touches-D2-L-hand DAUGHTER
Left hand: ----------

Right hand: indexfinger-touches-D3-L-hand SON // indexfinger-touches-D1-
Left hand: ----------

Right hand: L-hand DEAF
Left hand: ----------

'He/she has three children, one son, one daughter and another son. The first son is deaf.'

This example is in many ways comparable to the ASL example discussed by Liddell, Vogt-Svendsen and Bergman (this volume, Figures 3 and 4). The form and function of list buoys in VGT indeed appear to be very similar to what has been described in the literature, not only for American Sign Language, but also for a number of other signed languages. Given that the Liddell et al. chapter (this volume) is an up-to-date cross-linguistic account involving three different signed languages, we take that as the starting point

for presenting some characteristics of simultaneous constructions involving enumeration or listing in VGT. We will adopt both the notion 'list buoy' and the convention of glossing these buoys as NUMERAL-LIST, e.g. TWO-LIST, FOUR-LIST.

In example (1) above, the signer first mentions how many items are in the list. As with ASL, it is very common for VGT signers to do this. It seems a bit odd here that the signer uses the same hand to sign the preceding clause and then successively produce the buoy, as buoys are usually produced by the non-dominant hand. This particular signer, however, can be considered ambidextrous: although she shows a slight preference for her left hand, she uses her right hand almost as easily. This implies that it is possible to consider the left hand as the non-dominant hand in this entire stretch of signing. As pointed out by Liddell (personal communication, May 2005), the signer may have chosen to sign HAVE THREE CHILD with her left hand in anticipation of using the buoy (and signing it with the non-dominant hand) (cf. also Nilsson, this volume).

In example (1) the signer touches the relevant extended digit immediately before the production of the sign for the referent associated with that fingertip. There are also examples where only one or some of the fingers are physically referred to (i.e. by touching, tapping or pointing) in the process of 'setting up a list'. In example (2) the signer lists the three languages his former remedial teacher used to practise with him. He touches the fingertip

of the extended digit of the ONE-LIST but there is no contact between the dominant hand and the non-dominant hand when he continues signing, thereby producing TWO-LIST and THREE-LIST.

(2)

Right hand: ONLY LANGUAGE indexfinger-touches-D1-L-hand ENGLISH
Left hand: ONE-LIST----------

Right hand: FRENCH DUTCH THOSE-THREE
Left hand: TWO-LIST THREE-LIST----------

'(He) only (practised) languages: English, French and Dutch.'

As becomes clear from the comparison of the two examples discussed so far, like American, Norwegian, and Swedish Sign Language, VGT shows both static list buoys (or: single fixed-length lists) and sequentially built list buoys. When establishing the association between the digits of a static list buoy and the items on the list, touching – or otherwise physically referring to – the related fingertip immediately before or after producing the sign for the relevant item is common, and maybe even be obligatory. As already said, this is not the case for sequentially built list buoys. When signing for example the utterance that may be rendered as '(It has got) three colours, red, white and yellow', one signer produces the numeral handshapes ONE, TWO and THREE one after another with his non-dominant hand while simultaneously signing RED, WHITE and YELLOW with his dominant hand. In this example, there is no physical contact between the hands.

Interestingly, when we asked one of our informants whether it is possible to set up a list using a list buoy but without the dominant hand touching the fingers of the non-dominant hand, she said yes and subsequently produced an example summing up three items of a list with her dominant hand and simultaneously signing lexical items looking like ONE-LIST, TWO-LIST and THREE-LIST. However, these were produced with a rotating movement, as if she was signing the ordinal numerals FIRST, SECOND and THIRD. We did find examples in our corpus where this movement was absent, i.e. examples where the non-dominant hand is 'counting' while the dominant hand signs the referents associated with the digit 'last added'. We are not 100% sure whether the production of the non-dominant hand should be considered a sequentially built list in all of these cases. Nevertheless, examples such as these constitute one of the reasons why at this stage we are not inclined to make such a clear-cut distinction between list buoys and the corresponding numeral signs as other authors have done (cf. Pinsonneault & Lelièvre 1994:160 for Quebec Sign Language and Liddell et al. this volume).

Many VGT signs are two-handed, but when a signer is maintaining a stationary hand configuration forming a list buoy, this hand does not seem available for the production of two-handed signs. In this case, signers may decide to use only one hand to form the sign (as they also often do when one hand is occupied doing other things, e.g. holding something). However, as

Liddell et al.'s example from Swedish Sign Language (this volume, Figure 5) shows, it is also possible to involve the buoy in the production of the two-handed sign and use the non-dominant hand either as the base or one of the active hands in the production of a symmetrical two-handed sign.

In Flemish Sign Language the buoys ONE-LIST, TWO-LIST and THREE-LIST each come in two forms, either with or without extended thumb. This means that TWO-LIST may be signed with extended thumb and index finger or with the index finger and middle finger stretched out. The same can be said for the numerals ONE, TWO and THREE.

In all VGT examples we have seen so far, the first item on the list is associated with the 'top extended digit' (i.e. with the thumb in cases where the thumb is functioning as one of the digits, or with the index finger in examples where the thumb does not take part in the formation of the buoy). Often, the order that items on a list buoy are presented in mirrors some sort of inherent – often chronological – order between the referents in the real world, but this need not always be the case. We have asked some Flemish signers whether it would also be possible to 'turn the list around' and relate the first item on a list to the bottom extended finger. Apparently, this does seem to be possible for Flemish Sign Language; in most cases there is a motivation for the reversed order. One signer replied saying that she would use a 'reversed order' to describe a situation where four people lived (or stayed) on four different floors in a building. She claims she would form a

FOUR-LIST and would first relate the ground floor to the little finger, second, the first floor to the ring finger, etc. Another example (from a different informant) would be where the result of a sports competition is discussed. Signers might start off by telling who was third and associate this referent with the middle finger (i.e. the bottom finger) of a THREE-LIST, continue signing who was second, and finally relating the winner to the top finger. The result here is of course that the first one (i.e. the winner) is associated with the top digit after all. According to this signer, the 'reversed presentation' is chosen to create suspense.

3.1.2 Speakers enumerating on their hand(s)

Following a suggestion from Marianne Gullberg, we invited family and friends for an 'I am going on a trip and in my suitcase I put...' game. In this game, the first player says what she puts in the suitcase, the second player repeats this first item and adds a second one, the third player repeats items 1 and 2 and adds another, and so on. When players cannot recall all items named so far, they are 'out'. We played the game four times with a different group of (5 to 7) people. Most participants were adults, though one game involved a four-year-old and two teenagers.

Speakers employ different manual mechanisms when trying to remember all the items in the suitcase. One such mechanism involves the use of pointing gestures; each time the player tries to remember an item, she points at the

player who put that item on the list. We also observed people 'pointing' with their eyes, i.e. looking at the relevant person in the circle. As expected by Marianne Gullberg, several players used enumeration when recalling the items. Most often, the lists were sequentially built, i.e. the speaker first extended one digit when naming the first item, added a second digit when naming the second etc. When setting up a list for more than five items, players used their two hands and extended more than five fingers. We did not see examples where the speakers re-started using the same five digits on one hand to list items 6 to 10, but we would not exclude that possibility. During the game the 4-year-old child was participating in, she named the first item. By the time it was her turn again, there was a list of six items to be recalled. Her uncle, sitting on her left hand side, wanted to help her. He said the sentence 'I am going on a trip and in my suitcase I put…', which she repeated. She did not continue naming the items however. Her uncle, in an attempt to help her further, took hold of her left hand and formed a 'number one' handshape. This shows that, although few people are aware of their manual activity when playing this game, they do seem to realise that when trying to remember items on a list, forming 'numeral handshapes' may help.[1]

The examples we witnessed during these games are in many respects comparable to what happens when signers relate back to the digits of their hand(s) in order to prompt items of a list. In one example taken from our

VGT-data a signer talks about a visit to a deaf school. He tries to recall the people who went on the visit and when doing this produces a sequentially formed list containing 6 items. The 'numeral signs' ONE to FIVE are simultaneously formed by the non-dominant hand each time the associated referent is signed by the dominant hand. (He uses the two-handed version of SIX which he signs before naming visitor number six.) The form and function of this enumeration look very similar to most instances of listing items on the hand(s) during the game. Of course, it is possible that, whereas both signers and speakers form manual numeral gestures/signs when retrieving items (from memory), only signers use true list buoys. This would imply that only signers produce handshapes that look like, but may not exactly be the same as numeral signs, and hold these signs in a stationary position so that their physical presence helps in guiding the discourse as it proceeds. We did, however, also notice *speakers* produce examples of the non-dominant hand being held stationary with the fingers pointing sideways, i.e. the non-dominant hand displaying a typical list buoy form. In one instance, the speaker first said 'I want to take three', formed a static THREE-LIST buoy (not involving an extended thumb) on the non-dominant hand, and held the hand stationary while continuing: 'one for me, one for Ben and one for Maarten'. Both form and function here are very similar, if not completely identical, to examples involving list buoys in VGT.

Although we have not come across gesture literature concerning speakers using their hands to enumerate items, Gullberg notes that speakers do this very frequently in co-speech gesture (personal communication, April 2005). Our own – unsystematic – observations confirm that when speakers are not involved in a memory game, but are referring to a number of entities or ideas ordered in a list, they also frequently simultaneously combine naming these referents with setting up a static or sequentially built list buoy on their hand(s). These list buoys include both numeral handshapes with extended thumb and numeral handshapes only involving the fingers. Again just as with the signers, speakers may physically refer to the tip of the relevant finger when naming the referent associated with that finger, but equally, they may produce a list buoy on one of their hands without using the other hand to point at or touch the fingertips. 'Mixed forms' also occur, e.g. when speakers touch the first digit, then only extend but do not touch the second digit, touch the third digit etc.

As we have indicated earlier, signers can, after setting up a list, refer back to the fingers in that list to give further information about some of the items in the list (cf. example (1)). Likewise, speakers may also point to one or more of the extended digits in order to expand on the referents these digits are representing. As opposed to signers, however, it seems that they cannot do this without simultaneously using a co-referential expression in speech that takes up the aforementioned referent. Signers are free either to only point to

the digits in the list or to combine this with (re)naming the referents. This could be an important difference between 'list gestures' and 'list signs'.

Descriptive work of 'list buoys' in co-speech gesture could bring to light yet other similarities and differences in both form and function between lists on the non-dominant hand of a signer and lists set up in co-speech gesture. Furthermore, such work could show whether the spoken language influences the specific use of co-speech list buoys. It could be the case that for speakers of pro-drop languages, as for signers, the fingers in the list buoy can have a truly and purely pronominal function by themselves (Gullberg, personal communication, April 2005).

3.2 Pointing signs and pointing gestures

3.2.1 Introducing pointing signs in Flemish Sign Language

An extensive discussion of pointing signs, even when limited to pointing signs in Flemish Sign Language, would require a separate volume. Signers use pointing signs very frequently and these pointing signs come in different forms which serve a number of different functions. Here, we will first summarise some information on the form and function of VGT pointing signs in general, and continue to discuss examples of pointing signs that feature the simultaneous use of both hands. The brief general introduction to pointing signs below is based on Vermeerbergen (1996), which in turn is

inspired by Engberg Pedersen's (1993) analysis of pointing signs in Danish Sign Language. We note that when we use the notion 'pointing sign', we are referring to prototypical pointing i.e. pointing with an extended index finger. In other words, we exclude all forms of non-manual pointing as well as indicating signs showing a different hand configuration.

Signers may point at the actual location of entities or to places in the context of an utterance. When discussing a non-present referent, a signer may also choose to relate that referent to a locus. This locus may then be pointed at, e.g. for the purpose of anaphoric reference. Pointing signs may also be directed towards (a part of) the other hand, for example when referring to a referent 'depicted' by a classifier handshape produced by that other hand.

Often, but not always, the choice of a locus in space is motivated, for example when a signer associates her absent father with his now empty chair at the dinner table or when the president of an association is attributed a higher locus than the vice-president (cf. Vermeerbergen 1996:142-143; Engberg-Pedersen 1993:71-74; Schermer, Fortgens, Harder & de Nobel 1991:151-158). One locus may refer to more than one referent, at least when there is a connection between these referents (for example, a person and the town the person lives in) and when there is no need to keep them separated in the discourse.

Some VGT pointing signs are analysed as predicates, i.e. they are used to predicate the location or the direction of the movement of a referent.

However, in most cases, predicates meaning something like ‘be located at’, ‘be directed towards’, ‘move towards’ show a hand configuration different from that of the prototypical pointing sign. Non-predicative pointing signs can be combined with a noun to form a constituent or can have ‘constituent status’ by themselves. Engberg-Pedersen (1993; 2003) for Danish Sign Language, coins these two types of pointing signs as determiners and pronouns respectively. We adopt this approach here (cf. also Vermeerbergen 1996). However, we would like to point out that it is not always easy to distinguish between the two (cf. the discussion in Liddell (2003a:331) concerning the difficulty in distinguishing between (1) a pronoun followed by an appositive and (2) a determiner plus a noun in American Sign Language). As noted earlier, pointing signs functioning as determiners or pronouns are often directed at a specific locus but this is not necessarily the case. When not associated with a specific locus, the direction in which the signer points is irrelevant. Especially when undirected, the production of pointing signs may be extremely brief and informants often do not immediately notice their presence in videotaped data. Engberg-Pedersen (2003:274) considers the frequent occurrence of undirected pronouns and determiners in Danish Sign Language to be strong evidence for the integration of pointing signs in (the syntax of) the linguistic system.

Within the group of non-predicative pointing signs, Engberg-Pedersen (1993; 2003) further distinguishes the ‘proform’. This form is usually

produced by the non-dominant hand and is "used as a carrier of information which is otherwise expressed in spatial modifications of manual signs" (2003:275). An example of a pointing sign functioning as 'proform' can be seen in the example (example 3) below from Danish Sign Language (Engberg-Pedersen 1993:124).

(3)

1.p. POSS FAMILY DEAF+redupl.
PROFORM+'sideways-movement'

'In my family everyone is deaf.'

In this example, the pointing sign produced by the non-dominant hand and occurring simultaneously with the production of DEAF by the dominant hand, cannot be analysed as a determiner – since it occurs along with a predicate. According to Engberg-Pedersen (1993:124) it cannot be a pronoun either, because "it is not possible to use the reduplicated form of DEAF with a plural form of the pronoun (expressed by a sideways movement of the index hand)". Engberg-Pedersen's informants reject the combination of a "pronoun with sideways movement" followed by the reduplicated form of DEAF when both are signed with the same hand. If the pointing sign produced by the non-dominant hand in the example above is analysed as a pronoun, this would mean that it is possible to combine the plural form of the pronoun with the reduplicated predicative sign in a simultaneous construction, but the same combination is not possible in a non-simultaneous structure. Because of this, Engberg-Pedersen prefers to

distinguish proforms from pronouns and determiners. Vermeerbergen (1996:148) rejected this distinction, but in this chapter we reviewed Engberg-Pedersen's argumentation. In some cases (e.g. examples 10 and 13 in Engberg-Pedersen 1993:124) there may be good reasons for not analysing the pointing sign as a pronoun, at least not in Danish Sign Language. However, not every argument presented for Danish Sign Language also holds for VGT. For instance, the fact that the argument position is already occupied by another (pro)nominal is seen as a reason not to analyse a simultaneously produced pointing sign as a pronoun in Danish Sign Language (Engberg-Pedersen 2003:276), but we are not inclined to say the same for similar examples in VGT. Moreover, as Engberg-Pedersen (1993:125) herself points out, in many examples we have no means for deciding whether a pointing sign carrying spatial information and 'held' by the non-dominant hand should be seen as a proform or as the continuation of a pronoun. To sum up, the current state of the art regarding the research on pointing signs in VGT does not allow us to decide on the need for a separate category for these pointing signs which occur in simultaneous constructions and carry some sort of spatial information 'taken over' from other signs. However, we clearly do not wish to agree with Liddell (2003a:253-254) and totally exclude an analysis in terms of pronominal reference for pointing signs that are held stationary on the non-dominant hand during the production of other signs (see further).

3.2.2 Simultaneous constructions involving pointing signs in Flemish Sign Language

As noted earlier, Flemish signers may relate a non-present referent to a locus in the signing space. Establishing a locus is often done by means of a pointing sign indicating the locus before, after, or simultaneous with the production of the sign(s) for the referent. In the latter case, the pointing usually, but not always, ends immediately after articulating the associated sign(s). This type of 'localising pointing signs' produced simultaneously with the sign(s) for the referent may be analysed either as proforms or determiners, depending on the definition of these categories. The status of the pointing sign produced with the weak (left) hand in the following example is ambiguous:

(4)

Right hand: WHERE Ps-loc$_a$ GIRL
Left hand: SAY WHERE Ps-loc$_a$ -------

'I say: Where is the girl?' or: 'I say: Where is she, the girl?'

In the next example (example 5), the signer narrates a scene from an animated movie. The signer first explains that the two main characters are driving in one car and are being followed by two men in a second car. The final sign in this utterance is FOLLOW, which is produced with two 'fist-with-thumb-up' hand configurations, each representing one car. After the

production of this sign, the non-dominant hand remains in place, while the dominant hand continues to sign:

(5)

Ps KNOW NOTHING BEHIND FOLLOW // Ps STOP

'They/the men in the first car don't know they are being followed.
They/this car stop/stops.'

Both pointing signs produced by the dominant hand are directed towards the non-dominant hand. Interestingly, another signer, talking about the same episode, also first produces a sign involving two classifier handshapes referring to the two cars. However, this signer does not hold the configuration of the non-dominant hand, instead, she points at the exact location the hand was occupying:

(6)

Ps YELLOW CAR KNOW NOTHING FOLLOW BEHIND RED FOLLOW
'The men in that car (or: The men in that car, the yellow one) don't know they are being followed by the red car.'

In another example three pointing signs occur, each used to point at a referent present in the context of the utterance. Five people, four deaf and one hearing, are standing together, talking about deaf education. The signer explains to the hearing person that they all went to different schools. He first signs: WE SCHOOL DIFFERENT+++ // I ANTWERP ('We went to different schools. I went to Antwerp'). Then he explains where the other three went to school, each time pointing at the relevant person with his non-

dominant hand, while simultaneously signing the town where they went to school with his dominant hand:

(7)

Right hand: GHENT HASSELT BRUGES
Left hand: Ps------- Ps---------- Ps---------

'He went to Ghent, he to Hasselt and he to Bruges.'

According to our informants, this utterance is equally well-formed when the pointing signs are directed at loci associated with non-present referents.

In many cases, the production of the pointing sign accompanies more than one sign. Often, but not always, their form and (overall) function seem to fit Liddell's definition of buoys; they are produced by the non-dominant hand, held in a stationary configuration and their physical presence helps guide the discourse as it proceeds (Liddell 2003a:223). We give some examples of pointing signs that co-occur with more than one sign. In the first example, example (8), the pointing sign is directed towards a locus previously associated with a specific boy.

(8)

Right hand: GRAND^PARENTS DEAF GRAND^PARENTS
Left hand: Ps ----------

'His grandparents are deaf.' or 'He has deaf grandparents.'

The context for example (9) relates to a signer who is referring to a recent visit he made to a school for the deaf. The school housed two groups of

children: children educated orally and children educated through signed language. He says that he wanted to ask how the decision was made regarding the placement of the children in one section of the school as opposed to the other, and he says:

(9)

Right hand: IF PARENTS Ps-loc_a TRY SCHOOL FIRST TRY Ps-loc_a
Left hand: Ps-loc_a ----------

neg----------
Right hand: SIGNING ...OR FIRST ORAL CAN-NOT FOLLOW
Left hand: SIGNING Ps-loc_b ---------- CAN-NOT FOLLOW

Right hand: loc_b-TRANSFER-loc_a
Left hand:

'(...) whether the parents wanted to try it ('education in sign') and so the school did, or whether they were first placed in an oral program and transferred in case they could not keep up.'

Both pointing signs produced by the dominant hand as well as the first pointing sign on the non-dominant hand are directed towards the previously established locus for 'education involving the use of signs'. The second pointing sign on the non-dominant hand relates to the locus already associated with oral education while the movement of the sign TRANSFER starts in relation to the second locus and ends in relation to the first.

The next example, example (10), begins with two simultaneously produced pointing signs, both pointing in more or less the same direction. The last sign in the utterance is produced (by the non-dominant hand) in relation to the locus pointed at.

(10)

	t----------			
Right hand:	Ps TWO MAN		ENVELOPE	
Left hand:	Ps-		ENVELOPE	GONE-loc_b
Mouthing:		from		

'The two men with the envelope depart.'

Following Liddell (2003a:250-260; cf. also Liddell et al. this volume), the pointing sign produced by the non-dominant hand in (10) might be analysed as a POINTER buoy. POINTER buoys are used to point at an important element in the discourse. Vogt-Svendsen & Bergman (this volume) set apart POINTER buoys from point buoys for Norwegian and Swedish Sign Language. They claim that "a point buoy neither represents, nor points at, a prominent discourse entity. Instead, a point buoy represents a point in time or space and is used for visualizing temporal and spatial relations between entities." In our corpus, we have a number of interviews conducted in VGT. In every interview the interviewer asks whether the person he is interviewing would choose a different type of education if she were 16/17 again. When asking this question the signer often directs his non-dominant hand toward a locus in front of him (representing 'now') and produces most of the following signs in relation to this hand/locus:

(11)

Right hand:	E.G.	BACK	SIXTEEN	SEVENTEEN	BACK	WHAT
Left hand:	Ps----------					

'Suppose, if you were sixteen, seventeen again, what (would you study)?'

Both renderings of the sign BACK are produced with a movement starting above the non-dominant hand and ending at a locus left-front. This is also where the signs SIXTEEN and SEVENTEEN are signed. In this example the handshape of the non-dominant hand is not that of a typical pointing sign but rather a B-handshape. It seems that VGT-point buoys used to visualise temporal relations usually take this handshape. This does not seem the case for spatial point buoys, where the index hand is more common.

A pointing sign held by the non-dominant hand throughout the production of (almost) a whole sentence is also seen in interrogative structures where the non-dominant hand points at the addressee.

(12)

Right hand: FINISH SCHOOL GO-TO FINISH Ps-addressee
Left hand: FINISH Ps-addressee----------

'You have been in that school, haven't you?'

Miller (1994a:104) claims that for Quebec Sign Language this type of pointing sign functions as a marker for a yes/no-question. We hypothesise that this may be a valid analysis for the VGT examples as well.

3.2.3 Abstract deixis in gesture

Kita (2003a) offers a cross-disciplinary collection of various studies of pointing that shows that pointing during communication is a ubiquitous and universal phenomenon. However, as Gullberg (2004:235) points out, the

studies in Kita's book also indicate that "pointing is anything but simple". It occurs not only in diverse forms, as speakers may use their hands, eyes, heads and other body parts to point at entities and locations in space, but also with a rich variety of functions. Within the limits of this chapter we focus on those uses of pointing gestures which show correspondences with pointing signs in signed languages (cf. §3.2.1-2).

It is often assumed that when speakers point, they point at things, people or places that are present. Apparently, "when communicating about referents locatable in the speech situation, pointing is almost inevitable" (Kita 2003b:1). We have observed several examples of this, e.g. someone pointing at the phone that starts to ring and saying 'Listen, phone' and someone else saying 'That comes from this' pointing at the spilled water at the floor when saying 'that' and at the wet washcloth she is holding in her other hand when saying 'this'. As this last example illustrates, pointing signs may be crucial in order to understand the message.

Research on pointing gestures has shown that in speech (especially in narratives) exophoric pointing to present objects or persons is far less frequent than endophoric pointing, i.e. pointing to non-present entities. Such pointing at 'empty space' is also called 'abstract pointing' or 'abstract deixis' (for example, McNeill 1992; McNeill, Cassell & Levy 1993). "In concrete pointing there is a demonstrable target, but in abstract pointing the target is created by the speaker and concretely instantiated as a locus or

direction." (McNeill et al. 1993:5) In other words, in abstract deixis, pointing to a location assigns meaning to that location. According to Gullberg (1998:140) these locations – or loci – "can be referred back to anaphorically, such that a referent can be tracked by pointing to the locus associated with it in space". In the words of McNeill et al. (1993:11): "Deixis at the narrative level often establishes coreferential chains where successive references are linked by virtue of occupying the same locus in space", as exemplified in the example below:

(13)

and in fact a few minutes later we see [the artist]

Points to left side of space.

and uh she [looks over] Frank's shoulder at him

Points to the left side of space again.

(McNeill et al. 1993:11)

The (potential) co-referential use of pointing is yet another striking correspondence between deictic signs and deictic gestures.

In our observations of pointing gestures we have noticed that many instances of pointing are motivated, in that the locus pointed at has a certain semantic link with the referent being talked about. These examples encompass characteristics of both concrete and abstract deixis. An example is the following, where the speaker refers to his student days at the *Vrije*

Universiteit Brussel, simultaneously pointing at one of the people participating in the conversation who currently is working at that university. In another example, the speaker points at the person working in a primary school while saying 'and in primary education...'. Kita (2003b:4) presents a similar example where there is "an associative link from the direct referent to the inferred referent". Interestingly, his example of someone pointing at an empty chair to refer to the person who normally sits in that chair is an example often used in the signed language literature to illustrate that the choice of a locus is often motivated (cf. §3.2.1).

It is often assumed that whereas in signed languages the pointing sign may carry the full burden of personal pronominal reference, this is not possible in co-speech pointing. We have seen at least one example where pointing was the sole identification of the subject. In this example, the speaker points at himself, leaves out the subject (I) and auxiliary (have), and says 'also played outdoors a lot'. We have not seen examples where the speaker points at a locus for a non-present referent without also naming the referent in speech, but we imagine this is also possible.

We have witnessed speakers accompanying their speech with undirected pointing signs where it is not very clear what the function of the pointing may be. Similar examples can be found in signed language discourse; here, signers use their non-dominant hand to 'point' without any obvious reason while signing with their dominant hand.

To conclude, we cite Gullberg (2004:245) who raises the question as to whether pointing signs are conventionalised signs or spontaneous co-speech gestures and claims:

> The difficulties in distinguishing that which is linguistic, conventional, and grammaticised, from that which is gestural, non-conventionalised, yet systematic, are the same for Sign and gesture research. The view of how pointing or indexical movements fit into this perspective is of course of interest to both Sign and gesture research.

We could not agree more.

3.3 Concurrent lexical items and gesture(s)

3.3.1 Examples from Flemish Sign Language

Emmorey (1999:145) presents an example of an ASL signer holding a sign on the one hand while producing a gesture with the other when describing a scene from the 'Frog, where are you?' story. In this scene, a dog is running alongside a deer and wants the deer to stop. The signer first fingerspells 'dog', then forms a two-handed classifier construction meaning 'run', continues holding the classifier handshape of the dominant hand stationary while producing a gesture meaning 'stop' with his non-dominant hand, and

subsequently returns to the classifier construction. In another example taken from the same narrative the signer first produces the sign LOOK, holds this sign on his left hand while producing a string of gestures with his other hand and then continues the story with a classifier construction involving the use of both hands. According to Emmorey (1999:146), "this is as close as one gets to simultaneous gesture and signing".

We have discussed these examples from American Sign Language with some of our informants and they seem to think combinations such as these may equally well be produced by VGT signers. When going through our corpus in order to see whether we could find VGT examples, we did indeed come across instances of what looks like a gesture simultaneously occurring with a sign. In the next example, the signer first claims there are a hundred deaf children, he then stops and thinks about this (while holding his dominant hand and sort of wiggling his fingers) and then continues producing a sign (WRONG) + gesture (meaning 'wait' or 'stop') combination.

(14)

Right hand:	100	Ps	'wiggling-fingers'....	WRONG		I	162 DEAF
Left hand:				'wait/stop'			

'(There are) one hundred.... no, wait, I am mistaken, one hundred sixty two deaf.'

When looking at the data, one of our informants frequently pointed out utterances involving what is called 'constructed action' (see discussion

below) as possible illustrations of simultaneous sign plus gesture combinations. One example is the following:

(15)

Right hand: DRIVER WAIT vc: “read-newspaper” SMOKE/vc: “smoke”
Left hand: DRIVER ---------- vc: “read-newspaper”----------

‘The driver is waiting, he reads his newspaper and smokes a cigarette.’

Emmorey (1999) refers to the gestures in her examples using Clark’s notion of ‘component’ iconic gestures. According to Clark (1996), such iconic gestures are embedded as part of the utterance, as in ‘The boy went [rude gesture] and ran away’, i.e. the speaker (or signer) stops speaking (or signing) when producing the gesture. Emmorey points out that Liddell & Metzger (1998) describe such gestures as ‘constructed action’. In the sign linguistics literature this notion is used to refer to the signer re-enacting a character’s actions or pose. Liddell & Metzger (1998:660) write:

> The idea is that just as constructed dialogue is not a direct copy of the speech being reported, but is the current speaker’s construction of another person’s speech (Tannen 1986, 1989), constructed action is also not a direct copy of a character’s actions. It is the narrator’s construction of another’s actions (Metzger 1995).

Furthermore, they present an example from McNeill (1992) where a native speaker of English illustrates the actions of the cartoon character he talks about through (co-speech) gesture. They explicitly state that examples such

as these are comparable to instances of constructed action in signed language use. It is interesting to see that both signers and speakers 'construct action' and it would be exciting to conduct an in-depth comparison. However, this falls outside the scope of this chapter.

3.3.2 Holding gesture for discursive reasons

Both Emmorey's (1999) ASL examples and our own VGT examples show that a signer can hold a lexical sign on one hand, while simultaneously producing a gesture with the other hand. In spoken language use, however, the articulation of a word may be lengthened, but it does not seem feasible to 'hold' (part of) a word, simultaneously produce a gesture, and then later return to the word. Conversely, it is possible for speakers to produce a (two-handed) gesture, hold one hand stationary while producing one or more other gestures, and then return to the first gesture. Enfield (2004) describes many examples of such combinations of gesture-in-hold and other gestures in his data from speakers of Lao (a South-Western Tai language of Laos). He calls these combinations 'symmetry-dominance constructions' (Enfield 2004:57):

> Phase 1 is a two-handed symmetrical gesture; in the subsequent phase 2, one hand holds in position (representing given/topical/backgrounded

information from phase 1), while one hand executes a new gesture (representing new/focal/ foregrounded information).

We would like to explain one example of a symmetry-dominance construction from Enfield (2004) in which different speakers expand on two types of traditional Laotian fish-trapping mechanisms. One speaker describes the fluted shape of one particular fish trap by combining a spoken utterance with a symmetrical iconic gesture representing the fluted opening of the trap. In the subsequent dominance phase the speaker holds his left hand in position, while indicating with his right hand a fish going into the mouth and body of the trap. This example illustrates the typical use of symmetry-dominance constructions in co-speech gesture, showing the twofold function of the non-dominant hand. Firstly, it "provides a stable spatial reference point (or ground) facilitating the depiction of complex three-dimensional spatial representations by the dominant hand" (Enfield 2004:61). Secondly, Enfield stresses the discourse pragmatic function of the non-dominant hand, as it signals "that certain background information continues to be relevant to what is being said" (ibidem). For sign linguists acquainted with the literature on buoys, this and similar examples look very familiar.

Enfield himself points out that the non-dominant hand shows similar functions in signed languages (he refers to Sandler 2002 and Liddell 2003a

among others), which indicates that both signed languages and co-speech gesture make use of the same structures. As he puts it, the symmetry-dominance constructions in his data "reveal semiotic effects arising systematically from affordances of the manual/visuospatial modality which are *not* 'unique to signed languages'"(2004:119).

We would like to point out here that, whereas in the Enfield examples there is a close semantic relation between both hands, this need not always be the case in examples of speakers' gesture+gesture combinations. Gullberg (personal communication, April 2005) informs us that it is also possible to produce a (two-handed) iconic gesture, hold one hand stationary while producing one or more other, unrelated, gestures, such as beats, and then return to the first gesture. This often happens when there is some sort of interruption in the spoken message, e.g. when a speaker stops a narrative to utter a comment aside and later returns to the narrative.

4. Discussion

From the gesture research it becomes clear that gestures are an integral part of linguistic communication. Apparently, speakers must gesture when they speak and they primarily use the manual channel to do so. In contrast, researchers seem to assume that signers do not use the manual channel to

produce (similar) gestures. This assumption can be found in the signed language literature and is equally expressed by some gesture researchers. The following quotations illustrate this.

Sandler (2003:405) argues:

> If the oral channel is used for the purely linguistic signal, then the hands supply the gestural complement. If the manual channel is the medium for language, then the mouth provides the complementary gestures.

McNeill (1993:156) states that

> one supposes that for the deaf and others who make use of conventional signed languages the primitive stages of their sentences also include global-synthetic images, just as in the case of spoken languages, but their signs, unlike the spontaneous gestures of the hearing, do not, cannot, reflect this stage. The kinesic-visual medium is grammatical and socially regulated for the deaf, and this shifts the overt performance of deaf signers to the final stage of the internal temporal evolution of utterances.

The general idea seems to be that in signed languages, gesture either moves away from the manual channel and/or (partly) loses its true gestural character and becomes part of or integrated in the linguistic system. Both options, (1) gesture moving from the manual to the oral channel and (2) the integration of sign and gesture have been discussed in part 2 of this chapter. However, we also explored the possible presence of ('non-integrated') gesture in the manual production of signers. In line with the general theme of this volume, we have chosen to approach this issue by a comparison of (1) simultaneous constructions in signed languages, as exemplified by Flemish Sign Language, with (2) various, possibly comparable, types of speech combined with gesture.

Our preliminary comparison reveals many more similarities than we had expected, both in form and in function. We are also struck by the relatively high degree of systematicity in (co-speech) gesture. We found it very interesting to confront our knowledge of signed language structure with the results of gesture research and we hope to have shown that cooperation between sign linguists and gesture researchers may lead to a more profound understanding in both research domains. Such cooperation may for instance result in a clearer view on the delineation of the different forms of speakers' and signers' "visible bodily action that play a part in the process of the utterance" (Kendon & Blakely 1986:1).

Our excursion into the domain of gesture studies raises some general questions as to the relation (1) between signs and gestures, (2) between different forms of language/communication, and (3) between signed language research, spoken language research and gesture studies. We want to conclude this contribution by giving the initial impetus to some answers.

In some (more) recent work on signed language structure, researchers exploit the possibility of elements of the manual signal being gestural. Often, gesture is then defined according to the criteria presented in McNeill (1992). Interestingly, within the gesture literature, some of these criteria are being contested. McNeill (1992:21) considers gestures to be non-combinatoric, for example, which means that gestures do not combine to form larger, more complex gestures. However, Kendon (1997:119) refers to Webb (1996) who recognises stable form-meaning relationships in the metaphoric gestures of different speakers and who therefore speaks of a 'morphology' of gesture. Furthermore, other researchers do consider 'combinatorics' in co-speech gesture (e.g. Enfield 2004), thus suggesting structural similarities between co-speech gesture and signs of linguistic systems, such as signed languages. Kendon (1997:123) therefore points out that gestures are equivalent to lexical units in speech not only at a functional level (i.e. in communicating meaning), but also at a formal level: "there may be in gesture a spectrum of forms, more or less linguistic, rather than a sharp

break". Thereby he implies that some gestures, like (signed) linguistic forms, are analytic, compositional and combinatoric.

As mentioned in the introduction, Kendon (1988) observed that gestural phenomena can be categorised in different types, which led McNeill (1992) to introduce the notion of 'Kendon's continuum', an organisation of gestures/manual activity according to their language-like properties, their relationship to co-occurring speech, and their degree of conventionalisation. Gullberg (2004:246) writes:

> Roughly, primary Sign Language is placed at one end of the continuum (+language-like, +conventional, –co-occurring speech) and spontaneous co-speech gestures at the other (–language-like, –conventional, +co-occurring speech) with things like emblems/quotable gestures in the middle.

For us, the idea of characterising manual activity in relation to a continuum (or continua, cf. McNeill 2000:1) seems justifiable, not only for speakers, but for signers as well. Thus, we propose that not all manual production from signers be considered as belonging to one end of the continuum. Instead, we suggest that we leave open the possibility that signers make use of a whole range of forms. As becomes clear from the collection of papers in Kita's *Pointing* volume (2003a), pointing exists both as spontaneous co-

speech gesture and as conventionalised, language-like structure, which means that what looks like, and may be, the same thing, shows characteristics of both ends of the continuum (Gullberg 2004:246). We suggest that the idea that some instances of pointing may be characterised as (more) language-like, whereas others display gesture-like and non-language-like qualities, also applies to signed languages.

Following Taub, Pinar & Galvan (2002) and Enfield (2004:119) we would also like to suggest that when the communication of signers and speakers is being compared, it is speech in combination with (co-speech) gesture – and not speech by itself – that constitutes the appropriate level for cross-linguistic analysis. Moreover, we want to argue that just as gesture should be seen as an integral part of a speaker's communicative output, for signed languages as well, gesture may be part of the system:

> Rather than being homogeneous systems as commonly assumed (i.e., all major elements of signing behaviour are equally part of a morphosyntactic system), signed (and spoken) languages may be best analysed as essentially heterogeneous systems in which meanings are conveyed using a combination of elements, including gesture (Johnston, Vermeerbergen, Schembri & Leeson in press).

From the above, it follows that when studying natural language one should take into consideration the output of all different 'channels' involved. Moreover, as we already pointed out, for both signed languages and spoken languages, it should be taken into consideration that each channel can contain +language-like elements as well as –language-like elements. For instance, one should not *a priori* assume that the manual channel in signed languages is purely linguistic nor that the manual channel in oral languages contains nothing but –language-like elements.

Thus, we state that human communication, in signers and speakers alike, should be seen as a primarily multi-channel activity. This, of course, implies that simultaneity is omnipresent.

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Appendix: Transcription Conventions

Only minimal transcription and glossing are given for the signed language examples in this paper. The top line in a transcription represents the production of the dominant hand; the second line refers to the non-dominant hand. In other words: if the production of the left hand is written down in the top line of the transcription, this means the left hand functions as the dominant hand.

Other conventions used include:

GIRL	English gloss for a manual sign.
DOOR-OPEN	A gloss consisting of more than one word, but standing for one sign only.
DOOR-------	Lengthened production of a sign, e.g. when the sign is held in a stationary configuration.
GRAND^MOTHER	^ separates the parts of a compound
PS	Pointing sign, sometimes the referent or locus pointed at is included in the transcription: $PS_{\text{-addresssee;}}$ PS-loc_a
vc: "walk"	The abbreviation 'vc' stands for 'verbal constructions'. A verbal construction is a predicate that belongs to the productive lexicon. This group of predicates include 'classifier constructions' as well as 'constructed actions'. Verbal constructions are transcribed here only in terms of their meaning.
WALK/ vc: "walk"	When the status of a predicate is not clear, both interpretations (lexical verb sign/ verbal construction) are given.
"stop"	A gesture is represented by its meaning written between quotation marks.
...	A pause, hesitation in the production, e.g. when a signer stops to think.
//	Clause boundary.
D1, D2	Digit 1, digit 2 (in a list buoy).

neg----	Nonmanual marking for negation, the line following neg indicates the scope of the negation.
t-----	Nonmanual marking for topic, the line indicates the scope of the nonmanual marking.

When concurrent speech and gesture examples are presented, we follow the convention to indicate the extent of the meaningful part of the gesture by enclosing the concurrent word(s) the gesture co-occurs in square brackets. The gesture itself is described in italics.

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[1] The reason we claim that most speakers are unaware of their manual activity while playing this game, is that very often, when they were afterwards told that the purpose of the game was to observe what they were doing with their hands, many of them did not realise that they had been using their hands at all.