Monsters in the visual mode?*

Sandro Zucchi
Dipartimento di Filosofia
Università degli Studi di Milano

September 2004

Abstract

Lewis (1980) claimed that English lacks a device by which a sentence of the form "I'm hungry" may end up being true in a context if someone other than the speaker is hungry. A device of this sort, however, is quite common in the sign languages used by the Deaf communities all over the world and is part of a more general phenomenon sometimes referred to in the sign language literature as *role shift*. My discussion is based on data from Italian Sign Language. I propose an analysis of role shift that accounts for why the different constructions that make it up co-occur with the same non manual markings. I suggest, moreover, that its widespread use in sign languages may depend on the way gestures are structured in these languages. Finally, I compare my account of role shift with the one proposed in Lillo-Martin (1995) for American Sign Language and with the account of shifted first person indexicals proposed for Amharic in Schlenker (2000, 2003).

1 Lewis on shiftiness

There is an observation in Lewis (1980) concerning how the notion of truth-in-English should be specified by the grammar of English. Lewis says:

> To be sure, we could speak a language in which 'As for you, I'm hungry.' is true iff 'I'm hungry.' is true when the role of speaker is shifted from me to you - in other words, iff you are hungry. We could - but we don't. For English, the speaker is not a shiftable feature of context. (p. 27)[1]

*I thank Carlo Geraci for discussion and for helping me to collect the data. I thank Laura Lucchini for starting the ruminations that led to this paper.

[1]Page numbers refer to the reprint in Lewis (1998).

For his purposes, Lewis might have made his point in a slightly different way. He might have said:

> To be sure, we could speak a language in which 'As for him, I'm hungry.' is true iff 'I'm hungry.' is true when the role of speaker is shifted from me to him - in other words, iff he is hungry. We could - but we don't.

This Pseudo-Lewis example would illustrate Lewis's point as effectively: for English, the speaker is not a shiftable feature of context.

I don't know of any language that works in the way described by Lewis in his example. But I do know of a language that works in the way described by Pseudo-Lewis. Actually, I know of many languages of this sort: they are the sign languages used by the Deaf communities all over the world. They are "languages whose forms consist of sequences of movements and configurations of the hands and arms, face, and upper torso. Typically, [they] are perceived through the visual mode."[2] In these languages, it is quite common for the signer to be a shiftable feature of context.

Here's what I plan to do in this paper. In section 2, I'll provide evidence that indeed sign languages exhibit the kind of shiftiness described by Pseudo-Lewis. The discussion in 2 will show, what has often been observed in the linguistic literature, that the phenomenon of shifting first person indexicals in sign languages is related to another linguistic phenomenon: direct speech. I'm interested in the empirical issue of how this relation should be accounted for and in exploring the consequences of this account for the analysis other features of sign languages. But I'm also interested in discussing the consequences of signer-shift for the notion of truth-in-a-natural-language. So, the paper will reflect this double interest. In section 3, I'll present a case of a spoken language, Amharic, in which a similar phenomenon seems to arise: first person pronouns may refer to someone other than the speaker. This case of indexical shift was investigated in Schlenker (2000, 2003). The presentation of Schlenker's analysis will prepare the way for my analysis in section 4. In this section, I propose an account of why the kind shift described by Pseudo-Lewis and direct quotation are realized by the same means in sign languages. I also formulate a hypothesis to explain why the shift of first person indexical is such a widespread phenomenon in these languages. In section 5, I compare my account with the one proposed in Lillo-Martin (1995). Finally, in section 6, I contrast my account with Schlenker's account of speaker shift in Amharic and draw some conclusions. I sum up in section 7.

[2] Newport and Supalla (2001).

2 Role shift in sign language

The following discussion is based on data from Italian Sign Language (LIS), the sign language of the Italian Deaf community, which is more easily accessible to me for the purposes of field research. Similar facts hold, however, for many other sign languages.

2.1 Visual agreement

In order to introduce the phenomenon which is the object of my investigation, I need to fill in some background information concerning the expression of *agreement* in sign languages. In these languages, when the sign language counterpart of a referential term like "John" or "Mary" or "the boy" is signed, the sign is performed in a certain position in the space. This position in space will act from then on as a kind of discourse marker for future reference in the discourse.[3]

Now, Italian Sign Language verbs may either be signed on the body of the signer or in the space in front of her (*neutral space*, Volterra 1987). For example, the sign for "eat" is signed on the body of the signer, while the sign for "go" is signed in the space in front of the signer.

EAT:

[3]I'm simplifying a bit here. The reference marker corresponding to a term need not be the point in space where the term has been signed for the first time. If the discourse reports that the individual referred to has moved to another position, the reference marker for that individual may well be the point in the signing space that represents the position where that individual moved.

GO:


The verbs that are signed in the space in front of the signer, unlike the verbs that are signed on the signer's body, must begin from the position in space where the agent of the action is located by previous discourse, and verbs of this type that take more than one argument must end in the position where one of these arguments was signed (which argument this is depends on the kind of verb). For example, if one signs sentence (1-a) or sentence (1-b), the sign EAT (I follow the standard convention of using words in capital letters for signs) is always oriented in the same way, as it is signed on the signer's body.

(1) a. I EAT
b. HE EAT

On the other hand, if one signs sentence (2-a), the sign GO must begin from the point in space that corresponds to the signer, while if one signs sentence (2-b), the sign GO must begin from the point in space where HE is signed (as no locative argument is present, the sign ends in a direction that points away from the actor).

(2) a. I GO
b. HE GO

I GO:

HE GO:

Following Bahan's (1996) analysis of a similar phenomenon in ASL, I'll assume that the orientation of the LIS verb is the overt expression of subject (and object) agreement, namely LIS verbs that are signed in front of the signer express agreement with their arguments by spatial orientation. From this point of view, the spatial orientation of verbs of this kind plays a role similar, respectively, to the lack or presence of the third person suffix *-s* in English:

(3) a. I go.
b. He goes.

For this reason, I'll gloss the sentences in (2) in the following way, to signal that the verb agrees with the subject:

(4) a. I $_{I-}$GO
b. HE $_{he-}$GO

I should stress that I am not suggesting that, at a deeper level, only verbs that are signed in the space in front of the signer agree with subject and object. Underlyingly, it may be assumed that agreement markers are also present in (1). Moreover, it may very well be that other ways of expressing overt agreement are available in the language besides spatial orientation for movement verbs. Again, see Bahan (1996) for discussion of this point. Here, I concentrate on verbs showing spatial manifestation of agreement simply because these allow me to make my point in a simpler way.

Finally, let me point out that the language that I'm using here, Italian Sign Language, allows the subject of a sentence to be implicit. Thus, in (4) the subject may be dropped and the resulting sentence is (5) below.

(5) a. $_{I-}$GO
b. $_{he-}$GO

In this case, the spatial orientation of the verb alone will provide information about the verb's person.

2.2 First person in LIS

Let's now consider the following sentence:

(6) When Gianni will come, he'll give you a book as a present.

How is this sentence translated in Italian Sign Language? There are two options. One possibility is to sign sentence (7): [4]

(7) GIANNI ARRIVE BOOK $_{he-}$DONATE$_{you}$

With respect to the discussion of agreement in the previous section, the only element of novelty here is that the verb DONATE, besides displaying agreement with the subject, also displays agreement with the indirect object by ending in the position in the signing space which corresponds to the hearer.

There is, however, another alternative, which is to sign sentence (8):

(8) GIANNI ARRIVE $\overset{\rightarrow\text{Gianni}}{\text{BOOK}}$ $_{I-}$DONATE$_{-you}$

In this sentence, the verb DONATE shows first person subject agreement, but, while the sentence displaying first person agreement is signed, namely BOOK $_{I-}$DONATE$_{-you}$, the body of the signer is rotated toward the position in space where GIANNI was signed (this body shift is indicated in the gloss by a line covering this sentence with an arrow pointing to Gianni on top). Despite the first person subject agreement on the verb, the sentence still means that Gianni is the one who will give you a book as a present. In other words, in sentence (8), first person morphology is used to refer to someone other than the signer, someone we might refer to by using a third person pronoun.

The kind of body shift we see in (8) is also used in sign languages to express direct discourse. This is illustrated by the passage in (9) below taken from an Italian Sign Language narration of Aesop's Fable "The Tortoise and the Hare". In this example, the signer is quoting what the different characters say by shifting the body toward the point in space identified with the hare and the point in space identified with the tortoise. Notice that the first utterance contains a first person pronoun that does not include the narrator: [5]

[4] LIS is an SOV language, as the preverbal position of the object in (7) shows. The presence of the *when*-clause is signalled by the facial expression of the signer.

[5] Notice, moreover, that the example of body shift in the first utterance of (9) shows that one cannot explain away the shift of first person reference by maintaining that first person morphology

(9) a. $\overline{\text{HARE JUMP GET-CLOSE INDEX START ASK}}^{\rightarrow\text{body shifts right}}$
$\overline{\text{WE-TWO CONTEST CAN}}$
The hare, jumping, gets close to her (the tortoise) and starts asking:"can we have a contest?"

b. $\overline{\text{TORTOISE CONTEST HOW}}^{\rightarrow\text{body shifts left}}$
The tortoise: "which kind of contest?"

c. $\overline{\text{CONTEST RUN ARRIVE FIRST WHO}}^{\rightarrow\text{body shifts right}}$
"A running contest to see who arrives first"

The device of using first person pronouns, or first person morphology on the verb, to refer to someone other than the signer is quite common in sign languages. [6] Moreover, as we just saw, this use of first person, both in the case illustrated by (8) and in the direct discourse in (9), is accompanied by the same non manual marking, body shift. Indeed, in descriptive terms, cases like (8) and (9) are often referred to by the same name: *role shift* or, sometimes, *referential shift*. At a superficial level, it may be easy to see why the two phenomena are related: both in quotations and

plus body shift is in fact third person. Besides leaving unexplained why third person morphology should be related to first person morphology in this way, this hypothesis cannot account for (9). To make sense of quotational cases like (9), we must suppose that what the hare asks in quotes is "can we have a context?", namely WE-TWO in (9) is really first person.

[6] It has been investigated for ASL by several authors, including, among others, Bahan and Petitto (1980), Loew (1984), Shepard-Kegl (1985), Lentz (1986), Padden (1986), Lillo-Martin and Klima (1990), Meier (1990), Padden (1990), Lillo-Martin (1995), Lee, Neidle, MacLaughlin, Bahan and Kegl (1997); for Quebec Sign Language by Poulin and Miller (1995); for Swedish Sign Language by Ahlgren (1990); for Danish Sign Language by Engberg-Pedersen (1993, 1995); more recently, for Italian Sign Language by Lucchini (2005).

in constructions like (8), first person morphology lacks its customary reference, the person who is doing the signing. Yet, the shifts in first person reference in non quotational and quotational structures like (8) and (9) are rather different operations and there is no immediately obvious answer to the question why they should be accompanied by the same non manual marking. This is one reason, perhaps, while role shift as a whole often eludes formal analysis: we have different constructions, obviously related, yet also obviously different, signalled by the same non manual marking. How can we account for them and, at the same time, account for why they are signalled by the same means?

It might be objected that the puzzle here rests on the assumption that non-manual marking has some grammatical relevance; abandon the assumption and the puzzle disappears. But things are not so easy. The fact that non manual marking plays a role in the grammar of sign languages is, indeed, widely supported by the data. But, even if the particular non manual marking involved in (8) and (9) is not of grammatical nature, the puzzle remains: without this marking, first person morphology in (8) and (9) would receive a different interpretation. Why? What is it that this marking does in both cases that causes the switch in reference? I take it that this is one question that an adequate account of role shift should answer.

Before I get on with the story, three points should be made concerning the facts presented in this section. First, I'm not claiming that only verbs that are signed in the neutral space allow first person utterances to refer to someone other than the speaker. I'm using verbs that are signed in the neutral space to illustrate the phenomenon simply because the presence of first person agreement is overt with these verbs. Second, although the examples of role shift I presented here involve body shift as the mean by which the shift of reference of first person morphology is overtly signalled, this need not be the case. As Bahan and Petitto (1980) and Loew, Kegl and Poizner (1997) have observed for ASL, other means like eye gaze, head shift, facial expression, break in eye contact with the real world addressee, use of caricature can serve the same purpose. The third point concerns (8). By saying that, in translating (6) in Italian Sign Language, the signer has the choice between (7) and (8), I do not mean to suggest that (7) and (8) are equivalent in meaning, but only that the truth-conditional content of (6) can be expressed by (7) and (8). These sentences do differ in other respects, in particular (8), unlike (7), conveys the feeling that what happened is reported, in some sense, through the eyes of Gianni rather than through the eyes of the narrator. I take this to be a stylistic difference which is associated with this use of first person morphology in sign languages.

3 Role shift in spoken languages

3.1 First person in Amharic

In order to propose a semantic analysis of role shift in Italian Sign Language, it may be useful to look around for some semantic treatment of similar phenomena in spoken languages, if there are any. Of course, quotations of the kind we have seen for the fable of the tortoise and the hare are quite common in spoken languages as well (as English translation in (9) shows). However, the case exemplified in (8) is not common at all, as far as I know.[7] The closest example that I can find comes from the work of Schlenker (2000, 2003) and is from Amharic, a Semitic language of Ethiopia. Schlenker observes that, in this language, the word for "I", when it is embedded in the complement clause of an attitude verb as in (10), need not refer to the speaker of the context of utterance of (10), but may refer to John instead:

(10) john Jägna näNN yt-lall
John hero I-am says-3sg.m
"John says that he is a hero"

Schlenker argues that cases like (10) are not cases of direct quotation, since we also find the same behavior of first person pronouns in sentences like (11),[8] which would not make sense if understood as instances of direct discourse ("he said: ≪I refused to obey myself≫" would hardly be a sensible thing to say).

(11) a. alðtazzäzäNN alä
I-will-not-obey-me he-said
"He refused to obey me"
b. alaggðzäNN aläCC
I-will-not-help-me she-said
"She refused to help me"

The behavior of Amharic "I", if Schlenker is right, shows that first person in Amharic, like in LIS, can refer to someone other than the actual speaker. Still, Amharic "I" is different from LIS first person, since in non embedded contexts Amharic "I" always refers to the actual speaker. Indeed, Schlenker claims that the reference of Amharic "I" can shift only in the complement of attitude verbs.[9] In LIS, on the other hand, first person morphology can refer to someone other than

[7] See Lucchini (2005) for discussion of this point.

[8] From Leslau (1995).

[9] However, he reports no data with attitudes verbs other than "say" showing that Amharic "I" can shift its reference.

the actual speaker also in a matrix clause, as (8) above showed.[10] Nonetheless, the formal device adopted by Schlenker to account for the reference shift of Amharic "I" provides some of the required ingredients to account for role shift in (8). Let's see how it works.

3.2 Schlenker's account

Schlenker adopts a translation language with overt quantification over individuals, worlds, times, and contexts.[11] Predicates have time, world, and context arguments besides individual arguments. Attitude predicates like "say" are quantifiers over contexts which can bind free context variables in their scope. Sentences get evaluated with respect to a context and a variable assignment. Let's make a simple example to illustrate how the system works. Sentence (12) below would be represented as (12)', where (12)' is true in a context c relative to a variable assignment g under the conditions described in (13) (I use italics to distinguish contexts in the model from context variables):

(12) it's raining.

(12)' rain(now, actually)

(13) $[\![\mathrm{rain}(\mathrm{now}, \mathrm{actually})]\!]_{M,c,g} = 1$ iff it's raining at c_T, c_W (iff it's raining at the time and world of the context c)

Now, let's see how English sentence (14) is dealt with:

(14) John says that I'm a hero.

It's translation will be:

(14)' SAY$_{John,now,actually}$ c_i hero(I, time(c_i),world(c_i))

The denotation of the term "I" (translating English "I") relative to a context c is the speaker of c (namely, c_A):

(15) $[\![\mathrm{I}]\!]_{M,c,g} = c_A$

[10] This point needs further discussion, since Lillo-Martin (1995) claims that role shift is accounted for, underlyingly, by the fact that first person in ASL is in the complement of a covert point of view predicate. Lee et al. (1997) raise, however, several problems for Lillo-Martin's proposal. I come back to this issue in section 5.

[11] For sake of simplicity, I'll be adopting the first of the two formal systems presented in Schlenker (2003), the one he calls MEL (monster-friendly extensional logic of demonstratives with attitude operators).

The expressions "time" and "world" in (14)' are functors that combine each with a context variable c_i to yield the expressions "time(c_i)" and "world (c_i)", which denote, respectively, the time and the world of the context denoted by c_i according to the variable assignment g:

(16) a. $[\![\mathrm{time}(c_i)]\!]_{M,c,g}$ = the time of $g(c_i)$
b. $[\![\mathrm{world}(c_i)]\!]_{M,c,s}$ = the world of $g(c_i)$

Finally, "$\mathrm{SAY}_{\alpha,\beta,\gamma}\ \delta\ \varphi$" is true in a context c relative to the variable assignment g iff φ is true in every context c' compatible with what the individual denoted by α (in c) says at the time denoted by β (in c) in the world denoted by γ (in c), relative to a variable assignment which differs from g at most for the fact that it assigns c' to δ:

(17) $[\![\mathrm{SAY}_{\alpha,\beta,\gamma}\ \delta\ \varphi]\!]_{M,c,g} = 1$ iff for all c' compatible with what the individual denoted by α (in c) says at the time denoted by β (in c) in the world denoted by γ (in c), $[\![\varphi]\!]_{M,c,g[\delta\to c']} = 1$

I take it that a context c' is compatible with what an individual says in a world w at a time t iff that individual is the speaker of c' and nothing he says in w at t rules out the possibility that he is located at the time of c' in the world of c'. By these definitions, it follows that

(18) $[\![\mathrm{SAY}_{\mathrm{John,now,actually}}\ c_i\ \mathrm{hero}(\mathrm{I}, \mathrm{time}(c_i), \mathrm{world}(c_i))]\!]_{M,c,g} = 1$ iff for all c' compatible with what John says at the time of c in the world of c, $[\![\mathrm{hero}(\mathrm{I}, \mathrm{time}(c_i), \mathrm{world}(c_i)]\!]_{M,c,g[c_i\to c']} = 1$ iff for all c' compatible with what John says at the time of c in the world of c, the speaker of c is a hero at the time of c' in the world of c'.

What is crucial here is that the denotation of "I" is rigidly fixed by the original context of utterance of (14)', namely c. This means that, although in evaluating (14)', and thus English sentence (14), we must look at contexts that are different from the actual one, what is relevant in these contexts is whether the speaker of the actual context is a hero or not. This correctly predicts the behavior of "I" in English.

Now, let's turn to Amharic. Let's assume that Amharic "I" is translated as a complex term of the form "agent(c_i)", where c_i is a variable ranging over contexts. The denotation of "agent(c_i)" will be fixed in this way:

(19) $[\![\mathrm{agent}(c_i)]\!]_{M,c,g}$ = the speaker of the context denoted by $g(c_i)$.

The Amharic counterpart of (14), namely sentence (10), will be translated as (10)' (under the reading in which John says of himself that he is a hero):

(10) john Jägna näNN yt-lall
John hero I-am says-3sg.m
"John says that he is a hero"

(10)' SAY$_{John,now,actually}$ c_i hero(agent(c_i), time(c_i), world(c_i))

(20) $[\![(10)']\!]_{M,c,g} = 1$ iff for all c' compatible with what John says at the time of c in the world of c, $[\![\mathrm{hero}(\mathrm{agent}(c_i), \mathrm{time}(c_i), \mathrm{world}(c_i)]\!]_{M,c,g[c_i \to c']} = 1$ iff for all c' compatible with what John says at the time of c in the world of c, the speaker of c' is a hero at the time of c' in the world of c'. As c' is a context in which John is the speaker, (10)' is true iff for all c' compatible with what John says at the time of c in the world of c, John is a hero at the time of c' in the world of c'.

This correctly predicts the behavior of "I" in Amharic, since in the reading in (10)', Amharic sentence (10) is true iff John says that he is a hero, although the subject of the complement clause in (10) is a first person pronoun.

4 Accounting for role shift in sign languages

4.1 Setting the stage

We may now turn to the task of accounting for role shift in LIS. In order to do that, I need to add some ingredients to Schlenker's system. In this system, as I understand it, the grammar allows for the following options in generating translations for sentences: we can fill the world and time slots of the predicate with the terms "actually" and "now", or we can fill these slots with functors like "time(c_i)" and "world(c_i)", where c_i is a variable ranging over contexts. For sentence (12), these options are given in (12)' and (12)":

(12) it's raining.

(12)' rain(now, actually)

(12)" rain(time(c_i), world(c_i))

The option in (12)" is crucial to get the desired binding of the world and time parameters by attitude operators. As the grammar, in principle, generates both translations for sentences like (12), we need however to constrain the interpretation of (12)" to avoid that my utterance of (12) here and now turns out to be true because

it rains in some other world at some other time. This can be done simply by adopting the following convention about context variables: context variables that remain free refer to the actual context of utterance. A similar convention is assumed by Heim (1997) for free time variables: they refer to the time of the actual context of utterance.

Now, for the purpose of dealing with first person morphology in LIS, in addition to context variables, let's introduce in the translation language a set of speaker/signer variables s, s',s",... and let's adopt a similar convention to rule their free occurrence: these variables, when they remain free in the translation, must refer to the speaker/signer of the actual context of utterance. Technically, this can be done by stating the recursive definition of truth as truth in a context c relative to a variable assignment g *compatible with* c, where an assignment g is compatible with c iff for every context variable κ, $g(\kappa)$=c and for every speaker/signer variable σ, $g(\sigma)$=c_A.

Finally, let's introduce the operator $\rightarrow$ with the following interpretation (i is a variable ranging over individuals and σ a speaker/signer variable):

(21) $\quad [\![\rightarrow_i \sigma \varphi]\!]_{M,c,g} = 1$ iff $[\![\varphi]\!]_{M,c,g^{[\sigma:g(i)]}} = 1$

The assignment $g^{[\sigma:g(i)]}$ is the assignment which is exactly like g except for the fact that it assigns $g(i)$ to σ. Let's assume that the grammar of LIS, in generating the meanings of sentences of the language, makes $\rightarrow$ available as a covert operator. As $\rightarrow$ has no visible counterpart in the sentence, its insertion will be subject to pragmatic constrains: the discourse must give us some clue of its presence.

4.2 The interpretation of first person in LIS

The interpretation of LIS sentence (5-a) is now obtained by assuming that LIS "I" is simply represented by a signer variable, as in (5-a)':

(5-a) $_{I-}$GO

(5-a)' go(s, now, actually)

Indeed, according to the assumptions sketched in the previous section,

$[\![\mathrm{go(s, now, actually)}]\!]_{M,c,g} = 1$ iff $[\![\mathrm{go}]\!]_{M,c,g}(\mathrm{g(s)}, \mathrm{c_T}, \mathrm{c_W}) = 1$ iff c_A, the signer of c, goes at the time and world of c.

Let's now come back to LIS role shift. We have seen that role shift is often accompanied by some non manual indicator, like the position of the body, that signals the referential shift, namely the fact that the first person pronoun does not refer to the actual speaker. How should we represent the role of non manual markers of this

sort exactly? Let's assume that they induce a presupposition on the occurrence of the signer's variable, namely the presupposition that this variable denotes the individual corresponding to the position toward which the body (or the eye gaze, etc.) shifts. Technically, this may be done in this way. Referential terms in discourse are endowed with a referential index. For example, an occurrence of "GIANNI" will be represented in this way at LF:

(22) Gianni_{i}

The interpretation of indexed expressions of this sort will be as follows:

(23) a. $[\![\text{Gianni}_{\text{i}}]\!]_{M,c,g}$ is defined iff g(i)=$[\![\text{Gianni}]\!]_{M,c,g}$
b. when it's defined, $[\![\text{Gianni}_{\text{i}}]\!]_{M,c,g}$=$[\![\text{Gianni}]\!]_{M,c,g}$

Now, suppose that, after uttering sentence (24), I utter sentence (25) with the non manual marking pointing to the position where GIANNI was signed:

(24) GIANNI ARRIVE

(25) $\overset{\rightarrow\text{Gianni}}{\overline{_{I-}\text{GO}}}$

This will cause (the translation of) LIS first person morphology in (25) (namely, the variable s) to bear the same index i as (the translation of) GIANNI:

(25)' $\text{go}(\text{s}_{\text{i}}, \text{now}, \text{actually})$

Let c be the context in which I utter (24) and then (25). If we follow our convention concerning indices, the denotation of (25)' in c will now be specified thus:

(26) a. $[\![\text{go}(\text{s}_{\text{i}}, \text{now}, \text{actually})]\!]_{M,c,g}$ is defined iff g(i)=g(s);
b. if it is defined, $[\![\text{go}(\text{s}_{\text{i}}, \text{now}, \text{actually})]\!]_{M,c,g} = 1$ iff $[\![\text{go}]\!]_{M,c,g}(\text{g}(\text{s}_{\text{i}}), \text{c}_{\text{T}}, \text{c}_{\text{W}})) = 1$ iff c_A, the signer of c, goes at the time and world of c.

Given our assumption that signer variables that remain free must refer to the speaker of c, it must be the case that g(s) = the speaker of c. On the other hand, since i is the index "Gianni" bears, g(i) must refer to Gianni. Since Gianni is not the signer of c (I am), something goes wrong in (25)': the presupposition in (26-a) is not met, namely the truth value of (25)' is undefined in c.

What can be done to avoid getting an undesirable interpretation of this sort? One move made available by the grammar is the insertion of the covert $\rightarrow$ operator. By inserting this operator, we can satisfy the presupposition associated with (25)' and avoid the problem raised , since the signer variable is now bound and thus it

is no longer required to denote the actual signer. Indeed, by means of the operator $\rightarrow$, sentence (25) may be translated as (25)":

(25) $\overset{\rightarrow\text{Gianni}}{\overline{I_{-}\text{GO}}}$

(25)" $\rightarrow_{\text{i}}\text{s}_{\text{i}}$ go(s_{i}, now, actually)

According to the rule in (21) above, the interpretation (25)" will be computed as in (27):

(27) $[\![\rightarrow_{\text{i}}\text{s}_{\text{i}}\ \text{go}(\text{s}_{\text{i}}, \text{now}, \text{actually})]\!]_{M,c,g} = 1$ iff $[\![\text{go}(\text{s}_{\text{i}}, \text{now}, \text{actually})]\!]_{M,c,g^{[s:g(i)]}}$ = 1 iff $g^{[s:g(i)]}(i)$=$g^{[s:g(i)]}$(s) and $[\![\text{go}(\text{s}_{\text{i}}, \text{now}, \text{actually})]\!]_{M,c,g^{[s:g(i)]}} = 1$ iff $[\![\text{go}]\!]_{M,c,g^{[s:g(i)]}}(g^{[s:g(i)]}(s_i), c_T, c_W)) = 1$ iff Gianni goes at the time and world of c.

Thus, under translation (25)", sentence (25) receives the interpretation according to which Gianni goes, despite the fact that the verb GO bears first person morphology.

The other covert device available to the grammar to avoid the undesirable interpretation in (25)' is quotation (quotes " " are not phonologically overt nor are they visible in languages based on spatial representations). Any adequate treatment of quotation must yield the result that the indexicals that occur between quotes do not refer to the actual context of utterance. Indeed, if I utter (28), the indexical "I" in (28) does not refer to me:

(28) Gianni said: "I go"

Thus, it is reasonable to suppose that, in quoted discourse, the conflict between the presupposition generated by the co-indexing of "Gianni" and "I" and the fact that first person morphology refers to the signer no longer arises. Namely, when sentence (25) is quoted, the problem posed by (25)' will disappear:

(25)' go(s_i, now, actually)

Spelling out this account in detail requires a full fledged analysis of quotation, something which is beyond the scope of this paper.[12] But these observations may be sufficient to indicate that an account along the lines proposed here can explain why in sign languages the use of first person morphology to refer to someone other than the signer, both in quotational and in non quotational structures, is accompanied by the same non manual marking. The non manual marking (body shift, eye gaze, etc.) occurring with shifted first person indexicals in quotational and non

[12] See Recanati (2000) for a recent discussion of various analyses of direct discourse.

quotational structures is not in itself a grammatical marker of quotes or of non quotational signer shift (two functions that could hardly be accomplished by a single grammatical element). What the non manual marking does in connection with first person morphology is simply indicate that a certain presupposition is at stake concerning the referent of first person: the presupposition carried by the co-indexing of first person with other terms in the discourse. Quotation and signer shift operators co-occur with this non manual marking because they are both means to avoid conflict generated by this presupposition.

4.3 The role of the medium in shaping the grammar

Of course, one may wonder why this kind of presupposition is generated in the first place in sign languages. Would not life be easier if we simply avoided the use of non manual markings to generate presuppositions of the kind associated with (25)? After all, we saw that, at the truth-conditional level, there is a perfectly good alternative to (8), namely (7). Why should the signer bother uttering (8), when this runs the risk of generating a presupposition failure?

(7) GIANNI ARRIVE BOOK $_{he-}$DONATE$_{you}$

(8) GIANNI ARRIVE $\overbrace{\text{BOOK}\ _{I-}\text{DONATE}_{-you}}^{\rightarrow\text{Gianni}}$

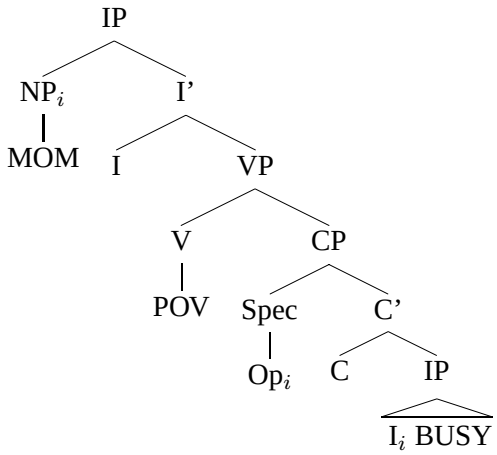
To achieve a certain stylistic effect perhaps. But role shift of the kind in (8), as we saw, is sufficiently restricted to sign languages to warrant some hypothesis concerning its use that ties it to the particular mode these languages employ. Why did the grammars of sign languages, but not the grammars of spoken languages, evolved such a device? Sign languages are visual-gestural. As we saw in 2.1, some of the gestures that are lexicalized in the grammar of a language are signed on the body of the signer and some are signed in the space in front of the signer (as far as I know, this is extremely common, perhaps universal, in sign languages). Verbs of the former kind, and they are many, are signed on the signer's body even when the actions they name are attributed to a third person. It may be conjectured that in a language of this sort it is useful to have a mode that consistently uses the body of the signer for the purpose of conveying information about the action of a third person. Role shift does just that. In role shift, verbs start from the signer's body even when they involve movement in the neutral space. The expressive device evolved by the grammar that allows the signer to follow this strategy may then have acquired stylistic features of its own.

5 Comparing notes

Lillo-Martin (1995) has proposed an analysis of reference shift in ASL that differs from the one presented here. According to her, ASL has a covert point of view predicate (POV) that is responsible for the shift in reference of first person indexicals. More precisely, she assumes that first person pronouns in ASL, in addition to their normal use to refer to the signer, may serve as logophoric pronouns when they occur in the scope of the POV predicate. For example, an ASL sentence (29), which involves referential shift of the first person pronoun, would have the syntactic analysis in (30)

(29) MOM $\overset{\rightarrow \text{mom}}{\overline{\text{I BUSY}}}$

(30)



The operator Op introduced in the complement of the POV predicate is bound by the subject of POV (MOM) and binds the logophoric pronoun "I" in its scope, which is thus coindexed with the subject of the POV. This gives us the desired reading for (29), according to which MOM is busy. According to Lillo-Martin, the POV predicate accounts both for quotational and non quotational instances of role shift.

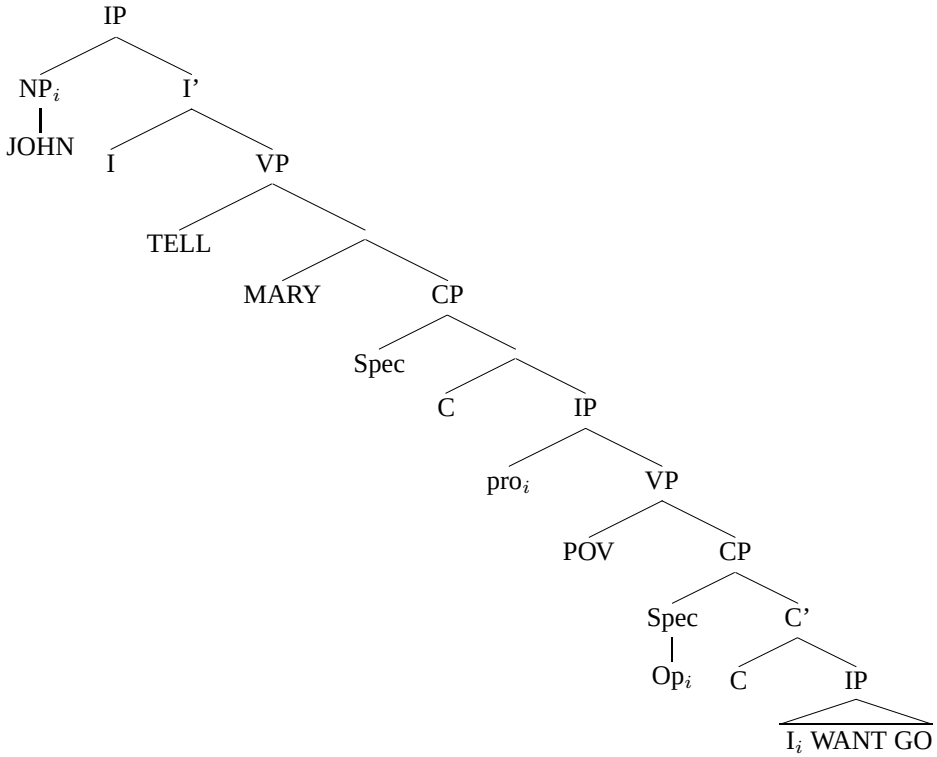
Lillo-Martin's analysis and mine have some feature in common, in particular the fact that the reference shift of first person indexicals is obtained *via* variable binding. This may be a desirable feature, as Lillo-Martin points out, as it relates role shift to the phenomenon of logophoricity in spoken languages. My analysis of non quotational instances of role shift *via* the $\rightarrow$ operator, however, does not assume that the clause containing the shifted first person pronoun is a complement clause of a higher covert predicate. So, as it is, it's not compatible with Lillo-Martin's account. One could assume that the $\rightarrow$ operator plays a role similar to

the operator introduced by the POV predicate in Lillo-Martin's analysis and this would make my proposal more similar to Lillo-Martin's from a syntactic standpoint. However, there are some reasons that advise against this move. Let's see what they are.

First, much of the evidence from ASL that Lillo-Martin presents for her proposal has been disputed in Lee et al. (1997). These authors question the grammaticality of many of Lillo-Martin's examples that are crucial for her claim that role shift involves an embedded construction of the kind illustrated in (30). [13] This fact, while it does not show that Lillo-Martin's analysis is incorrect, it calls, however, for a more careful evaluation of the data. Second, according to Lillo-Martin's analysis, a sentence like (31) would be syntactically analyzed like (32), where the subject of the POV predicate is a null pronominal of the kind occurring in *pro-drop* languages:

(31) JOHN$_i$ TELL$_j$ MARY$_j$ $\overset{\rightarrow \text{John}}{\overline{\text{I WANT GO}}}$
John told Mary: "I want to go."

(32)



[13] See Lee et al. (1997) for discussion.

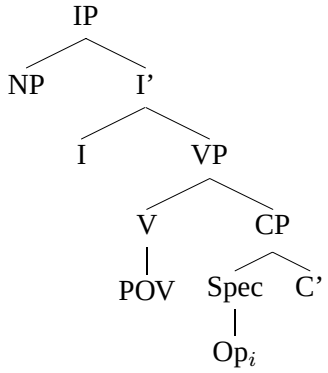
As Lee et al. (1997) point out, however, this predicts that the subject of the POV predicate in (32) could be an overt NP, contrary to what (33) shows:

(33) JOHN TELL$_j$ MARY$_j$ BILL$_i$ $\overrightarrow{\text{I WANT GO}}^{\rightarrow \text{Bill}}$

Notice that here we cannot avoid the problem by assuming that the covert POV predicate fails to license overt subjects, since according to Lillo-Martin the subject MOM in (29) is an overt subject of a POV predicate.

Finally, notice that Lillo-Martin's account runs into the problem I raised in section 2.2, which is one of the reasons driving my analysis of role shift. According to Lillo-Martin, all instances of quotational and non quotational role shift are accounted for by the occurrences of the same covert POV predicate and operator, as in (34):

(34)



However, Lillo-Martin provides no semantics for the POV predicate. It is not obvious, at least not to me, that there is one semantic analysis of this predicate that can cover both quotational and non quotational instances of role shift. This is why I suggest that what ties various instances of role shift together is the presupposition induced by the non manual marking and not a uniform semantics for both quotational and non quotational instances. Lillo-Martin's POV predicate, without a semantics to explain how the different instances of role shift can be reduced to the work of this predicate, is simply a label and does not explain what makes role shift a unitary phenomenon.

6 Monsters in the visual mode? No

I conclude by discussing some consequences of my account for the analysis of indexicality in natural languages. Here's one often quoted passage by Kaplan:

> Are there such operators as 'In some contexts, it is true that', which when prefixed to a sentence yields a truth if and only if in some context the contained sentence (not the content expressed by it) expresses a content that is true in the circumstances of that context? Let us try it:
>
> (9) In some context it is true that I'm not tired now.
>
> ...I am not saying we could not construct a language with such operators, just that English is not one. And such operators could not be added to it. (Kaplan 1977, p. 510)[14]

Kaplan calls operators of this kind, which he claims do not exist in English, *monsters*. In recent years, some authors have tried to show that monsters are indeed instantiated in natural languages. Schlenker calls attitudes verbs monsters, since they require some indexicals in their complements to be evaluated with respect to a context other than the original context of utterance.[15] The fact that Amharic "I" does not refer to the speaker in the complement of "say" is taken by Schlenker to be evidence for his claim.

Even if Schlenker's analysis of attitudes verbs is correct, I am not sure we should talk this way, call them monsters. In Kaplan's system, a monster is an operator that requires a formula in its scope to be evaluated at a different context:

(35) $[\![M\varphi]\!]_{M,g,c,t,w} = 1$ iff $\exists$c$'/\forall$c$'$ such that $\ldots : [\![\varphi]\!]_{M,g,c',t,w} = 1$

In Schlenker's analysis, on the other hand, attitudes verbs do not change the context with respect to which the complement clause is evaluated, as shown by the fact that both the formula with SAY and the formula in its scope are evaluated at the same context index c:

(17) $[\![\text{SAY}_{\alpha,\beta,\gamma}\ \delta\varphi]\!]_{M,c,g} = 1$ iff for all c' compatible with what the individual denoted by α (in c) says at the time denoted by β (in c) in the world denoted by γ (in c), $[\![\varphi]\!]_{M,c,g[\delta\rightarrow c']} = 1$

This feature of Schlenker's account is not accidental: we need to keep the context parameter fixed because otherwise we would expect that *any* indexical in the scope of attitude verbs should shift its reference and this is not the case, as English "I" shows, for example. This means that, strictly speaking, in Schlenker's system attitude verbs are not monsters in Kaplan's sense.[16] Quantification over contexts,

[14] Page numbers are to the 1989 reprint of Kaplan's paper.

[15] See Israel and Perry (1996) for a similar hypothesis.

[16] See Percus (2002) on this point, and von Stechow (2003) for further discussion.

paired with the fixed context index, does not serve the purpose of shifting the context of utterance as a whole, but that of shifting a number of contextual features at once. This allows to take care of the fact that several indexicals referring to different features of context may referentially shift at once in the scope of attitudes verbs (for example, in Amharic first and second person indexicals may denote individuals other than the speaker and the hearer in the scope of *say*[17]).

Turning now to my analysis of first person shift in LIS, is there a moral to draw regarding the issue of monsters? I think that, if my analysis is correct, it shows that no monster is lurking around here, not even in Schlenker's sense. Indeed, the signer shift operator, represented by $\rightarrow$, is not a monster and, more importantly, it could not be cast as one, if it must do the job of accounting for role shift in LIS. Let's see why. In my original formulation, the operator $\rightarrow$, when used to bind a signer variable s, has simply the effect making the formula in its scope true relative to an assignment that differs from the original one for the value that it assigns to s:

(21) $\quad [\![\rightarrow_i \sigma\varphi]\!]_{M,c,g} = 1$ iff $[\![\varphi]\!]_{M,c,g^{[\sigma:g(i)]}} = 1$

Since signer variables translate LIS first person morphology, the result is that LIS first person may denote an individual other than the signer. By the interpretation in (21), it should be clear that the $\rightarrow$ operator is not a monster in anybody's sense, since evaluating a sentence of the form "$\rightarrow_i \sigma\varphi$" does not require changing the context index or quantifying over contexts.

Now, the account of role shift based on (21) assumes a translation for LIS first person which differs from the one assumed by Schlenker for Amharic first person. Indeed, in Schlenker's proposal, as we saw, the referential shift of Amharic first person is achieved indirectly by binding the context variable occurring in the formula in the scope of the attitude operator. This has the result of shifting not only the reference of Amharic "I", but also the reference of any indexical whose translation, like that of Amharic "I", contains a context variable. Schlenker argues that this is a desirable result for the complements of attitudes verbs. If he's right, one may wonder whether role shift in LIS may be accounted for by binding a context variable and LIS first person may be interpreted like Amharic first person. This would amount to adopting the following interpretation for $\rightarrow$ and LIS first person morphology:

(36) $\quad 1^{st}$ person (LIS) $\Rightarrow$ agent(c_i)

(37) $\quad [\![\rightarrow_i \delta\varphi]\!]_{M,c,g} = 1$ iff $\exists c'^{[c'_A = g(i)]}$ such that : $[\![\varphi]\!]_{M,c,g^{[\delta \rightarrow c']}} = 1$

[17] Moreover, according to Schlenker, temporal indexicals like "two days ago" in English may refer to a time other than the time of the context when they are in the scope of propositional attitude verbs. See Schlenker (2000, 2003) for dicussion.

By (37), the $\rightarrow$ operator is now a quantifier over contexts, like propositional attitude operators in Schlenker's system (unlike these operators, however, it is, underlyingly, an existential quantifier). By letting this quantifier bind the context variable c_i in the translation of first person, we may achieve the desired result that first person denotes someone other than the speaker.

In fact, this move is not advisable for LIS. In Schlenker's system, it would predict that (38) is a possible translation for (25):

(25) $\overset{\rightarrow\text{Gianni}}{\underset{I-}{\text{GO}}}$

(38) $\rightarrow c_i$ go(agent(c_i), world(c_i), time(c_i))

This would mean that LIS sentence (25) is true, if uttered in this context, iff Gianni goes in some world and at some time which may differ from the actual world and time. This is not correct: sentence (25) is true, if uttered in this context, just in case Gianni goes in this world at this time. Notice that we cannot avoid the problem posed by (38) by requiring the new context c' introduced by the $\rightarrow$ operator to be a context that differs from the actual one only by having a different speaker/signer. There is no such thing as a context of this sort. The different coordinates of the context do not vary independently: you change who is doing the speaking/signing in a context and you also change the world or the time of the context, since the speaker/signer of a context is, presumably, the person who is speaking/signing at the world and time of the context.[18] This is why quantification over contexts will not do for role shift in LIS: it may change too many features of the context at once.

7 Summing up

This paper proposes some answers to different questions:

- How is the phenomenon of role shift in sign languages to be analyzed?
- What is the function of the non manual marking that co-occurs with the referential shift of first person indexicals in quotational and non quotational structures?
- Why is role shift so widespread in sign languages?
- Does the semantic analysis of role shift in non quotational structures require that we acknowledge the existence of monsters?

[18] This is what makes contexts different from mere collections of coordinates (*indices*) in Kaplan's system: the different features of a context are not independent from one another (contexts are *proper indices*).

I argued that the analysis of role shift involves treating first person morphology in LIS as a distinguished variable which, when free, denotes the speaker of the context. In my account, the body shift (or eye gaze, etc.) that co-occurs with the shift of reference of first person is simply device to introduce a certain presupposition. The shift of first person reference in quotational and non quotational structures allows one to meet this presupposition. The widespread use of role shift in sign languages may depend on the way the lexicon of these languages is shaped: with so many signs that are performed on the signer's body, it may be natural to keep using the signer's body also as a point of reference for signs that are not required to originate spatially from the signer. According to this hypothesis, the widespread occurrence of role shift in sign languages would ultimately be a consequence of the gestural nature of these languages, in particular of how gestures that are lexically codified (signs) are structured. The medium sign languages use (gestures not sounds) would thus play a role in shaping their grammars by causing the development of an expressive device (role shift) which, to some extent, is specific to them. Finally, I argued that non quotational role shift in sign languages is not a place where monsters dwell.

References

Ahlgren, I.: 1990, Deictic pronouns in Swedish and Swedish Sign Language, *in* S. D. Fischer and P. Siple (eds), *Theoretical Issues in Sign Language Research, Volume 1: Linguistics*, The University of Chicago Press, Chicago.

Almog, J., Perry, J. and Wettstein, H. (eds): 1989, *Demonstratives: an Essay on the Semantics, Logic, Metaphysics, and Epistemology of Demonstratives and Other Indexicals*, Oxford University Press, Oxford.

Bahan, B.: 1996, *Non-Manual Realization of Agreement in American Sign Language*, PhD thesis, Boston University.

Bahan, B. and Petitto, L.: 1980, Aspects of rules for character establishment and reference in ASL storytelling. Unpublished manuscript, Salk Institute.

Engberg-Pedersen, E.: 1993, *Space in Danish Sign Language. The Semantics and Morphosyntax of the Use of Space in a Visual Language*, Signum, Hamburg.

Engberg-Pedersen, E.: 1995, Point of view expressed through shifters, *in* K. Emmorey and J. S. Reilly (eds), *Language, Gesture, and Space*, Lawrence Erlbaum, Hillsdale, NJ, pp. 133–154.

Heim, I.: 1997, Tense in compositional semantics: introduction. Handout for the MIT seminar on Tense, Aspect and Events.

Israel, D. and Perry, J.: 1996, Where monsters dwell, *in* J. Seligman and D. WesterståL (eds), *Logic, Language and Computation*, Cambridge University Press, Cambridge, England.

Kaplan, D.: 1977, Demonstratives. manuscript, Philosophy Department, UCLA. Published in Almog *et al.* (1989), pp. 481-563.

Lee, R. G., Neidle, C., MacLaughlin, D., Bahan, B. and Kegl, J.: 1997, Role shift in ASL: A syntactic look at direct speech, *in* C. Neidle, D. MacLaughlin and R. G. Lee (eds), *Syntactic Structure and Discourse Function: An Examination of Two Constructions in American Sign Language.*, American Sign Language Linguistic Research Project Report No. 4, Boston University, Boston, MA.

Lentz, E. M.: 1986, Strategies for teaching verbs and role-shifting, *in* C. A. Padden (ed.), *Proceedings of the Fourth National Symposium on Sign Language Research and Training*, National Association of the Deaf, Silver Spring, MD, pp. 58–69.

Leslau, W.: 1995, *Reference Grammar of Amharic*, Harrassowitz, Wiesbaden.

Lewis, D. K.: 1980, Index, context and content, *in* S. Kanger and S. Öhman (eds), *Philosophy and Grammar*, D. Reidel Publishing Co., Dordrecht, pp. 79–101.

Lewis, D. K.: 1998, *Papers in Philosophical Logic*, Cambridge University Press, Cambridge, England.

Lillo-Martin, D.: 1995, The point of view predicate in American Sign Language, *in* K. Emmorey and J. S. Reilly (eds), *Language, Gesture, and Space*, Lawrence Erlbaum, Hillsdale, NJ, pp. 155–170.

Lillo-Martin, D. and Klima, E. S.: 1990, Pointing out differences: ASL pronouns in syntactic theory, *in* S. D. Fischer and P. Siple (eds), *Theoretical Issues in Sign Language Research, Volume 1: Linguistics*, The University of Chicago Press, Chicago, pp. 191–210.

Loew, R.: 1984, *Roles and Reference in American Sign Language: a Developmental Perspective*, PhD thesis, University of Minnesota.

Loew, R., Kegl, J. and Poizner, H.: 1997, Fractionation of the components of role play in a right-hemispheric lesioned signer, *Aphasiology* **11**, 263–281.

Lucchini, L.: 2005, L'impersonamento nella lingua dei segni italiana. Tesi di laurea, Università degli Studi di Milano.

Meier, R. P.: 1990, Person deixis in American Sign Language, *in* S. D. Fischer and P. Siple (eds), *Theoretical Issues in Sign Language Research, Volume 1: Linguistics*, The University of Chicago Press, Chicago, pp. 175–190.

Newport, E. L. and Supalla, T.: 2001, Sign languages, *in* R. A. Wilson and F. Keil (eds), *The MIT Encylopedia of the Cognitive Sciences*, The MIT Press, Harvard, MA.

Padden, C. A.: 1986, Verbs and role shifting in ASL, *Proceedings of the Fourth National Symposium on Sign Language Research and Training*, National Association of the Deaf, Silver Spring, MD, pp. 44–57.

Padden, C. A.: 1990, The relationship between space and grammar in ASL verb morphology, *in* C. Lucas (ed.), *Sign Language Research: Theoretical Issues*, Gallaudet University Press, Washington DC.

Percus, O.: 2002, The relevance of Schlenker's *Plea for Monsters* to the Variables Project. Informal Project Report, The Variables Project, University of Tübingen.

Poulin, C. and Miller, C.: 1995, On narrative discourse and point of view in Quebec Sign Language, *in* K. Emmorey and J. S. Reilly (eds), *Language, Gesture, and Space*, Lawrence Erlbaum, Hillsdale, NJ, pp. 117–132.

Recanati, F.: 2000, Unarticulated constituents, *Technical report*, CREA, Paris.

Schlenker, P.: 2000, *Propositional Attitudes and Indexicality: a Cross-Categorial Approach*, PhD thesis, MIT.

Schlenker, P.: 2003, A plea for monsters, *Linguistics and Philosophy* **26**, 29120.

Shepard-Kegl, J.: 1985, *Locative Relations in American Sign Language Word Formation, Syntax, and Discourse*, PhD thesis, MIT.

Volterra, V. (ed.): 1987, *La lingua italiana dei segni. La comunicazione visivo-gestuale dei sordi*, Il Mulino, Bologna.

von Stechow, A.: 2003, Feature deletion under semantic binding: Tense, person, and mood under verbal quantifiers, *in* M. Kadowaki and S. Kawahara (eds), *NELS 33 - Proceedings of the North East Linguistic Society*, Massachusetts Institute of Technology.

Sandro Zucchi
Dipartimento di Filosofia
Università degli Studi di Milano
via Festa del Perdono 7
20122 Milano
Tel. 02-503-12388
alessandro.zucchi@unimi.it
http://www.filosofia.unimi.it/ zucchi