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To shift or not to shift. Quotation and attraction in DGS

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Abstract

There are two main competing views about the nature of sign language role shift within formal semantics today: Quer (2005) and Schlenker (2017a,b), following now standard analyses of indexical shift in spoken languages, analyze it as a so-called 'monstrous operator', while K. Davidson (2015) and Maier (2017), following more traditional and cognitive approaches, analyze it as form of quotation. Examples of role shift in which some indexicals are shifted and some unshifted pose a prima facie problem for both approaches. We show that the quotational approach can deal with these examples in terms of unquotation and a pragmatic principle of 'attraction'. We present a systematic empirical investigation of the predictions of the quotation/attraction approach in DGS (German Sign Language). Results for the second person pronoun, IX2, fully support the attraction hypothesis, while results for IX1 and HERE are inconclusive.

1. Introduction.

One way of reporting what someone said, signed, thought, or did, is to reproduce some salient aspect of the reported speech, thought or action, and mark it as such, i.e. as a reproduction of someone else's act. For example, in written English we can report what someone said or wrote by reproducing the literal form and putting quotation marks around it (direct discourse), or we can reproduce the content of what was expressed in our own words as the complement of a saying verb (indirect discourse). In many – if not all – sign languages, one salient way of reporting speech, sign, thought, or other actions or attitudes is with role shift. As a rough, first approximation, in role shift, the reporter marks that she's taking on the role of the reported speaker/agent, e.g. by shifting her body to the right or left, or by breaking eye contact with the addressee, and then reports on the speech or other event/attitude by signing the reported speaker's words, thoughts, or by mimicking the action/event that took place.

In recent years, sign languages, and role shift in particular, have received increasing attention from formal semantics. Currently, there have emerged two competing views on the nature of role shift in sign languages: the monster approach, and the quotation approach. The monster approach, championed by Quer (2005) and Schlenker (2017), builds on the success of monster-based analyses of indexical shift in spoken languages like Amharic and Zazaki (Schlenker 2003; Anand 2006), and holds that role shift is essentially a form of indirect speech, with a monstrous operator in the syntax that causes indexicals to behave kind of like in direct discourse. The quotation approach, championed by (K. Davidson 2015) and Maier (2017, forthcoming), follows more traditional and cognitive approaches in analyzing role shift as a form of direct discourse. In this paper we present new empirical evidence relating to the indexical shifting behaviors predicted by the two approaches. Our data on the interpretation of second person pronouns, i.e. IX2 ('you'), provide strong support for Maier's version of the quotation approach, where quotation is

coupled with a pragmatically driven unquotation mechanism. Our other data, regarding IX1 and HERE, is less clear.

The paper is structured as follows. Section 2 introduces the two currently competing views on role shift semantics in some detail. Section 3 introduces the ways both sides try to deal with data involving 'mixed indexicality', i.e. well-known examples from the sign language literature in which some indexicals are shifted while others in the same role shifted clause are not. Section 4 describes and discusses our controlled judgment elicitation experiment with native DGS signers.

2. Role Shift

A good amount of the literature on sign language role shift is framed in theoretical paradigms of discourse analysis and/or cognitive linguistics. In this corner of linguistics the term 'reported discourse' is considered problematic and replaced by 'constructed dialogue' (Tannen 1989) or 'demonstration' (Clark and Gerrig 1990), to highlight the fact that direct speech reports in oral conversation are seldom verbatim reports of some speech act that actually took place earlier, but rather creative performances by the reporter. Thus, for instance, (Liddell and Metzger 1998) refer to role shift in ASL as constructed dialogue and propose an analysis in terms of the cognitive linguistic framework of blended mental spaces. Others, like Cormier et al (2013) use the more general term 'constructed action' to encompass both role shifting to report speech and thought as well role shifting to demonstrate non-linguistic actions or events (as well as purported mixes of the two).

Meanwhile, linguists working in more formal and/or generative traditions have settled on the term 'role shift', and analyze it as some kind of operator in the syntax (Lillo-Martin 1995; Quer 2005; Schlenker 2017). Typically, authors in this formal radition have focused somewhat less on action demonstration, and more on speech and attitude reporting uses. In terms of the traditional direct vs indirect distinction, role shift is considered more a form of indirect than of direct discourse reporting -- more specifically, a form of 'monstrous indirect discourse'.

In this paper we will mostly follow the terminology of formal linguistics and stick with the term role shift. We will use the term action role shift to refer to the demonstration of non-linguistic events, but mostly focus on what Schlenker has dubbed 'attitude role shift', i.e. the signed reporting of speech, signs, and thought through role shift. However, we will defend something closer to the cognitivists' position, that role shift is a form of direct quotation, which we analyze as a form of demonstration.

2.1 Role shift as visible monster

Formal semantic interest in role shift started with Zucchi's (2004) and Quer's (2005) observations that role shift in LIS (Italian Sign Language) and LSC (Catalan Sign Language), respectively, behave rather like a monster, i.e. a context shifting operator, directly contradicting Kaplan's (1989) influential theory of context-dependence in natural language. Some early purported examples of monsters in spoken languages include indirect speech constructions in Amharic, Slave, and Zazaki (Schlenker 2003, 2011; Anand and Nevins 2004; Anand 2006). Quer and Zucchi basically took Schlenker's linguistic diagnostics for monstrosity and concluded that role shift in LSC and LIS are likewise monsters. Let's reconstruct Quer's argumentation in some detail.

The first step in diagnosing a monster is to establish indexical shift, i.e. an occurrence of an indexical (*I, you, tomorrow, now, here*) interpreted relative to some utterance context other than the actual one of the report. This is easy. First person pronouns (IX1) are almost always shifted, as illustrated by textbook examples like:

(1)   MOM $\overline{\text{IX1 BUSY}}$ (Lillo-Martin 1995, ASL)
        'Mom was like, I'm busy'

First some notes on notation: English words in capital letters indicate lexical signs of the indicated language (here, American Sign Language (ASL)). Pronouns, which correspond to pointing signs are glossed as IX ('index'): IX1, typically the index finger pointing to one's own chest, could be translated as a first person singular pronoun, 'I'; IX2, pointing at one's addressee, corresponds to English 'you'; and IX3, pointing at some other person or object, either present in the actual context or represented more abstractly as a discourse referent or 'locus' in the signing space in front of the signer, corresponds to English *he, she, it, this,* or *that*. In some cases we use specific labels or descriptions of the individuals or loci pointed at (e.g. IXa in (3) below). Overlining is often used to indicate some non-manual marking that occurs simultaneously with the overlined signs. In this paper, plain overlining always indicates role shift. With those preliminaries out of the way, the crucial observation is that the first person indexical IX1 in the role shift in (1) does not refer to the actual signer, but rather to the mother, which is evidence of indexical shift.

The next step in monster detection is to exclude a quotational analysis. This is crucial, since quotation arguably exhibits indexical shift, but is not considered a monster in the Kaplan/Schlenker sense of the word. Consider a case of pure quotation in written English:

(2)   John uttered the phrase "I'm happy"

This quotation involves indexical shift in the weak sense that whatever it is that the word *I* inside the quotation refers to (depending on your preferred theory: John, some utterance event, a word type/token, a letter, a sound, etc), it does not refer to the actual speaker. Rather than being a monster, i.e. a context shifting operator, quotation marks as in (2) are usually analyzed as a device to mark that the enclosed expression is mentioned, rather than used (which explains why we can quote foreign words, ungrammatical phrases and other uninterpretable gibberish, cf. Cappelen and Lepore 2012). We'll return to the proper analysis of quotation below. What's important here is that in diagnosing a monster we need to exclude the quotation option.

As it turns out, excluding quotation is quite tricky, and often glossed over too quickly. Quer uses one of Schlenker's original tests: mixed indexicality. The logic of this test is as follows, if we have two indexicals in the same clause, and one is interpreted as shifted but the other as unshifted we can't be dealing with quotation since quotation shifts everything at once. Quer's example (note: we're marking the non-manual *when*-clause marking with a double overline, reserving single overline for role shift; IXa is a pointing to locus a; subscript i indicates coreference):

(3) $\overline{\overline{\text{IXa MADRID MOMENT}}}^{\text{t}}$ JOAN$_i$ $\overline{\text{THINK IX1}_i}$ STUDY FINISH HERE
        'When he was in Madrid, John thought he would finish his studies here (=in Barcelona).' (LSC, Quer 2005)

The indexicals are IX1 ('I') and HERE ('here'), only the first of which is interpreted as shifted, according to Quer's native informant. Indeed, a straightforward paraphrase in terms of pure quotation in English would give the wrong result, blocking the intended reading where 'here' refers to Barcelona:

(4)   When he was in Madrid, John uttered the words 'I'll finish my studies here.'

Related tests involve establishing grammatical dependencies between an element within and one outside the scope of the alleged monster. Anand (2006) for instance shows that his shifted indexical elements co-occur with other elements that have undergone wh-movement ('Who$_i$ did John$_j$ say [I$_{j?}$ have to help t_i]?') triggered by a matrix question, and NPI licensing by a downward entailing operator in the matrix clause ('Mary$_j$ never$_i$ said [I$_{j?}$ did anything$_i$ wrong]'). These types of tests are rarely applied to sign language data. Schlenker (2017) does examine wh-movement and NPI licensing in ASL and LSF but gets conflicting results, so we'll put this aside for now (cf. K. Davidson 2015 for some discussion).

Importantly, all the above tests against quotation only rule out full clausal, pure quotation. They don't exclude an analysis in terms of partial or mixed quotation (D. Davidson 1979; Potts 2007), targeting only certain indexical and expressive elements, but leaving other elements in the same clause unshifted (cf. Maier 2016 for an analysis of role shift along these lines). To exclude this possibility, Quer (2012) observes that written or spoken quotation is reserved for speech reporting, while role shift extends to thought and other attitude reports, as shown in (3), and even to entirely non-linguistic action reports, as illustrated in (5).

(5)   a.   RAIN-PIPE, CAT CLIMB-UP(2h)$^{<tongue\ out,\ squint,\ gaze\ up>}$,
                FLAT-SURFACE BIRD LOOK-DOWN$^{<pursed\ lips,\ eyes\ open,\ gaze\ down>}$
                'The cat (eagerly/slyly) climbs up through the rain pipe while the bird
                (curiously) looks down from the roof.' (Pfau and Quer 2010)
        b.   IX-a JOHN OFTEN MEET-MEET [POOR PEOPLE]b, IX1 KNOW LOTS PEOPLE
                IX-arc-b IX-a FINISH 1-GIVE-b-rep MONEY
                'John often meets poor people. I know lots of people that he has given
                money to.' (Schlenker 2017a)

Schlenker (2017a) introduced the term action role shift for this phenomenon, but is more frequently discussed in sign language linguistics under the header of constructed action or (non-quotational) role shift. Schlenker uses allegedly non-quotational examples like these as a purported knock-down argument against any quotational approach to role shift, because only linguistic material can be quoted, not actions.

A closer look at oral quotation in spoken language however reveals that such usages are not particular to sign language role shift. First of all, note that thoughts are quite frequently quoted directly, even in formal writing styles:

(6)   They seemed suspicious of Suess, who learned through the grapevine that many
        thought he was an ICE spy. *What's happening to me?* he thought. *I'm right back where
        I started.*

What's more, as we saw above, proponents of the cognitive/discourse analytic tradition have long stressed that the direct discourse construction in spoken language is just a special case of a much more general mechanism of demonstration that includes traditional quotation but is frequently used by speakers to report on mental states or actions (Clark and Gerrig 1990).

(7)   a. John said, "I'm an idiot"
       b. They were all "Ewww" <disapproving facial expression>
       c. That cat was like, don't touch me!
       d. And then he was like <clawing motion with right hand, hissing>

If all these can be captured as instances of a uniform mechanism of demonstration, say, then it seems quite plausible that this should extend to the different varieties of role shift in sign languages. This is what we'll do in the remainder of this section.

2.2 Role shift as quotation/demonstration

Despite the arguments above that purport to show that role shift is not quotational, K. Davidson (2015) has recently proposed a uniform, formal semantic analysis of various quotational phenomena, including such spoken examples as in (7) and action and attitude role shift as in (3) and (5), in terms of demonstration. The starting point is the spoken English be-like construction, taking a demonstration as argument. A demonstration is an event, an action by the speaker, that simulates/depicts/iconically represents – pick your preferred terminology – some event that is relevantly similar. Thus, in (8) the speaker's frowning depicts some aspect of John, maybe his actual frowning, but potentially something more abstract, like a troubled mental state.

(8)   John was like <frown>

Crucially, the question of exactly what it is that is depicted (a facial expression, a type of behavior, a vague mental state, an utterance, etc) is not answered in the semantics but left entirely to pragmatics. All we have in the logical form is that the reporter's demonstration d somehow demonstrates some event e, and that the subject of the be-like construction is the agent of that event. If we consider words in angled brackets as names or descriptions of demonstration events we can represent the derivation as follows (in a standard neo-Davidsonian extension of Heim and Kratzer's (1998) compositional semantic framework, cf. K. Davidson 2015):

(9)   a. $[[\text{like}]] = \lambda d \lambda e.\text{demonstr}(d,e)$
       b. $[[\text{like} <\text{frowns}>]] = \lambda e.\text{demonstr}(<\text{frowns}>,e)$
       c. $[[\text{John was like} <\text{frowns}>]] = \lambda e.\text{agent}(e,\text{john}) + \lambda e.\text{demonstr}(<\text{frowns}>,e)$
          $= \text{(by predicate modification)} = \lambda e.\text{agent}(e,\text{john}) \wedge \text{demonstr}(<\text{frowns}>,e)$
             $= \text{(by existential closure)} = \exists e.\text{agent}(e,\text{john}) \wedge \text{demonstr}(<\text{frowns}>,e)$

Now, a demonstration event need not be a facial expression or hand gesture, but may also include linguistic material, i.e. utterances by the reporter that iconically represent utterances by the subject, or that, again, more abstractly characterize a certain type of mental state or event:

(10) Sue was like "Well...<looks annoyed>...ehh"

According to the composition above, the logical form would come out the same (note: d_0 designates the reporter's demonstration, i.e. his uttering "well.. ehh" while looking annoyed.)

(11) $[[(10)]] = \exists e.\ \text{agent}(e,\text{sue}) \wedge \text{demonstr}(d_0,e)$

In line with Lillo-Martin's original 'be-like' gloss in (1) above, role shift can now be seen as just another realization of the demonstration relation, i.e. the role shifted clause in a report is a signed demonstration of some other event, possibly but not necessarily the event of someone signing that very same sentence.

(12) $[[\text{MOM }\overline{\text{IX1 BUSY}}]] = \exists e.\text{agent}(e,\text{mother}) \wedge \text{demonstr}(d_1,e)$
       (where d_1 designates the event of the reporter signing IX1 BUSY)

Perhaps the main selling point of a quotation/demonstration approach to role shift is that it accounts for what Schlenker calls iconicity effects. Schlenker shows that in a role shift report, gestures, signs, facial expressions etc. that can be interpreted iconically, i.e. as resembling aspects of the reported situation, are usually interpreted iconically. Thus, the signer's happy face during role shift can only be interpreted as representing the happiness of the reported speaker or signer, not of the reporter himself. Schlenker confirms that this leads to infelicity in cases like (13) where the smiling starts well before the role shift and hence would initially be interpreted as indicating the reporting signer's happiness.

(13) # SEE THAT ARROGANT FRENCH SWIMMER IX-a? YESTERDAY IX-a ANGRY.
       - :)
        IX-a SAY $\overline{\text{IX-1 WILL LEAVE}}$
       'See that arrogant French swimmer? Yesterday he was angry. He said 'I will leave'
       (ASL, Schlenker 2017a)

To account for this effect, Schlenker has to assume a mechanism of iconicity maximization in addition to his monstrous indexical shifter. The demonstration approach by contrast simply analyzes indexical shifting and iconicity together as by-products of quotation, i.e. demonstration.
     Let's take stock and compare the different approaches to role shift. The advantage of a quotational approach over the monstrous operator approach is that it immediately accounts for iconicity effects and indexical shift. The advantage of the demonstration approach over other quotational approaches, like Maier's (2016) mixed quotation proposal, is that it accounts for action and attitude role shift alike, as well as iconicity effects and be-like quotative constructions in spoken language. On the other hand, it's not so clear that the demonstration approach, as it stands, extends well to the kinds of cases that have traditionally been at the center of debates in formal semantics, viz. written direct and indirect reports (and mixtures like mixed quotation and free indirect discourse), since it's not clear how to conceive of a static, written string of letters as an event demonstrating some live speech or signing event. Moreover, the pragmatic flexibility offered by K. Davidson's demonstration approach may offer a bit too much flexibility for direct say/wrote

reports. If Mary sighs and says, "Ok, suit yourself, I don't care anymore what you do" we may well felicitously report this, colloquiually, as in (14a), but (14b) is somewhat less felicitous, and when both the original and the report are part of a written conversation (in email, scientific articles, or legal documentation) it is even less so.

(14)　a.　Mary was like, Whatever, man <looks exasperated, sighs>
　　　　b. # Mary said, "Whatever, man"

In other words, for canonical, written direct speech reports we'd expect some degree of specifically linguistic similarity between report and source.

　　　　Following Maier (Maier forthcoming, 2017), we propose to take the best of both worlds for traditional cases, i.e. we model them as introducing a speech event with a given linguistic form or content:

(15)　a.　John said "I don't know"
　　　　　　∃e.agent(e,John)∧form(e,'I don't know')
　　　　b.　John said that he doesn't know
　　　　　　∃e.agent(e,John)∧content(e,λw.not(know(i,w)))

We can then appeal to Davidson's demonstration analysis of action reports in speech as well as action role shift in signing. Crucially, since both action and speech reports are event modifiers, we can model hybrids, where demonstrations in speech reports serve as optional modifiers, at least in modalities that allow for demonstrating.

(16)　John said "I don't know <shrugs, looks annoyed>"
　　　　∃e.agent(e,John)∧form(e,'I don't know')∧demonstr(d,e)

So what about role shift in this hybrid picture? Should we analyze it as pure demonstration or as direct discourse, optionally modified by a demonstration? Still following Maier (forthcoming) we opt here for the latter, primarily because it allows us to implement a mechanim of unquotation, which we will use in modeling unshifted indexicals in both spoken direct discourse and signed role shift below.

(17)　MOM: $\overline{\text{IX1 BUSY}}$
　　　　∃e.agent(e,mother)∧form(e,'IX1 BUSY')∧demonstr(d$_3$,e)
　　　　(where d$_3$ refers to the signer's optional demonstration of some salient aspects of the mother's signing or actions or state of mind, etc)

3. Shifted and unshifted indexicals

Both approaches can account for the basic fact that indexicals can shift under role shift. But we've already seen that at least in some sign languages not all indexicals always shift. For instance in Quer's key example, the indexical HERE remains unshifted. In this section we explore what the different theories predict about what shifts when. In the next section we examine these predictions empirically in DGS.

3.1 ShiftTogether

Schlenker's original formalizations allow monstrous operators to shift any subset of indexicals in their scope. Anand and Nevins (2004) argue that this overgenerates. Based on fieldwork in Slave, Zazaki and Amharic they hypothesize the following linguistic universal:

(18)   SHIFTTOGETHER: if one indexical in a clause is shifted (by a monstrous operator) than all shiftable indexicals in that clause are.

Schlenker (2017a) argues that SHIFTTOGETHER holds for role shift in ASL and LSF, on the basis of examples like (19), which contain two indexicals (IX1 and HERE) but don't allow mixed readings.

(19)   [Context: In 2010, I met Jean in LA. At the time, he often changed jobs and home bases.]
                                                 _____
       DATE 2010 PLACE LA JEAN SAY DATE 2014 IX-1 WORK HERE.
       'In 2010 in LA Jean said, "In 2014 I will work here"' (LSF, Schlenker 2017a)

However, Quer's LSC example, (3), discussed above shows SHIFTTOGETHER is violated in LSC, because IX1 is shifted and HERE is unshifted, both are in the same role shifted clause, and HERE is a shiftable indexical, i.e. it does occasionally shift under role shift in other examples of role shift in LSC. Similar violations of SHIFTTOGETHER are observed for a variety of indexicals in DGS (Herrmann and Steinbach 2012; Hübl 2014) and NGT (Dutch Sign Language) (Maier 2017, forthcoming).

(20)   [uttered on Thursday] PAST WEDNESDAY M-A-R-I-A 3a T-I-M 3b BOTH EAT
                                              _____
       IX-3a TELL: IX1 LIKE TODAY DANCE GO
       'On Wednesday, Maria and Tim ate there together and she told him that she would like to go dancing on Thursday.' (DGS, Hübl 2014)

These data provide prima facie evidence against a monstrous approach, or at least they force us to abandon the neat operator-theoretic account of Anand & Nevins (2004) that explained the seemingly universal SHIFTTOGETHER constraint. As Schlenker (2017a) points out, a more flexible account of monsters involving explicit quantification over context variables (as originally proposed by Schlenker 1999, 2003), is powerful enough to represent any mixed indexical readings. Still, in light of Anand & Nevins's crosslinguistic spoken language data and analyses we'd expect at least some explanation of why visible monsters would differ from their spoken language counterparts in this respect.
       Whether this LSC/DGS/NGT mixed shifting behavior should be counted in favor of the quotational approach remains to be seen, as quotation is also generally assumed to affect all indexicals in a clause equally. We challenge this assumption in the next section.

3.2 Iconic indexicals, unquotation, attraction

Both the Anand-style monstrous operator account of context shifting and K. Davidson's demonstration account seem unable to handle the mixed indexicality role shifts discussed above. Davidson defends her approach by suggesting that mixed indexicality "can be implemented through the demonstration relation as long as the indexicals that shift are

iconic for purposes of demonstration" (K. Davidson 2015:502). The idea is that only iconic elements are construed as part of the demonstration, non-iconic signs and gestures are presumably construed as what Clark and Gerrig (1990) call supportive aspects, and hence not shifted. Indeed, if we look once again at Quer's central example, the unshifted indexical is a pointing sign, which is not very iconic at all. HERE picks out its referent by pointing to it rather than by similarity (the downward pointing index finger does not in any way resemble Barcelona or Madrid). Similarly, Hübl (2014) argues that HERE and TODAY in DGS are less shifty than TOMORROW and YESTERDAY because the former are "more indexical". Both of these explanations run afoul of the fact that IX1 is a rather pure, non-iconic, non-metaphorical indexical, yet it does tend to get a shifted interpretation, even in examples where some other indexical is not shifted.

We propose that an additional mechanism of unquotation is needed to capture the truth conditions of mixed indexical role shifts. Using square brackets to indicate that some expressions is to be interpreted outside the scope of a quotation, as is customary in certain written prose genres, the logical form of a mixed report come out as follows:

(21) JOAN THINK "IX1 STUDY FINISH [HERE]"
     'John thought "I will finish studies [here]"'

Semantically, the effect of unquotation is that the quotation is broken up so that the role shifted part specifies the form of part of the original utterance event and the unquoted part specifies the extension of some other part. Formally:

(22) $\exists e \exists e' < e$ (agent(e,Joan) $\wedge$ form(e)='IX-1 STUDY FINISH'+form(e')
        $\wedge$ referent (e')=here $\wedge$ demonstration(d,e))

Here, 'form' denotes a partial function from events to their phonological/linguistic form, i.e. sequences of signs if the event includes a signing event; '<' denotes the subevent relation; '+' denotes sign concatenation; 'referent' denotes a function mapping a signing event to the entity that is the referent of the signed expression; 'here' denotes the location of the actual utterance context. The last conjunct is the optional demonstrational strengthening of the quotation (e.g. the signer's facial expression or mode of signing could be interpreted as a demonstration of some aspect of the reported event e). All together, this captures the intended, mixed indexical reading: there is an event of Joan signing or saying something with a certain linguistic form, viz. the sequence of signs IX1 STUDY FINISH followed by some additional sign that referred to the actual utterance location, Barcelona (probably -- but not necessarily -- the name sign BARCELONA). See Maier (2017) for some more worked out examples and details on the semantics of unquotation.

Unquotation is a very powerful tool, especially if we allow it to occur covertly, as in the examples at hand, presumably.[1] Freely allowing any indexical to unquoted in any role shift will vastly overgenerate mixed readings. In order to describe what can get unquoted when, we propose a pragmatic constraint, based on Maier's (2017) reformulation of Evans's (2012) 'speech act participant attraction' principle:

(23) ATTRACTION: when talking about the most salient speech act participants in

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1   It has been suggested that there might be some subtle marking of unquotation, like a quick glance at the intended referent. We have not observed this in our data, but it's certainly possible that such a marking would be used in spontaneous conversation to disambiguate. We leave this suggestion for future research.

your immediate surroundings, use indexicals to refer to them directly.

We're using 'refer' here in the pragmatic sense of a speaker using an expression to refer to something; 'refer directly' means 'use an indexical that picks out its referent by being evaluated relative to the current utterance context'. For example, in sign languages, pointing to a person to refer to that person involves direct reference in this sense. In written English, indexicals in quotation typically refer indirectly. For instance, in (3)/(21) the speaker refers indirectly to John by using the first person pronoun under role shift. Maier proposes that unquotation is licensed, in language production, precisely in cases that would otherwise violate ATTRACTION. Thus, in Quer's example, the signer talks about Barcelona, his presumable salient current location, and hence will want to refer to it directly, by the pointing sign HERE. But since he is using role shift (for independent reasons, perhaps related to vivid story telling), which as a form of quotation automatically shifts all indexicals, he can't use HERE. The tension between the verbatimness inherent in our semantics of quotation/demonstration and the pragmatic principle of attraction can be resolved by unquotation, predicting precisely the configuration that Quer and others have observed, with shifted IX1 (since John is not saliently present at the time of the report he can't be referred to directly) and unshifted HERE.

4. Evidence for attraction

In the previous section we discussed some examples of mixed indexicality in LSC, DGS, and NGT and argued that these are problematic for the common operator-theoretic monster approach, as they violate SHIFTTOGETHER. On the other hand, those examples seem to fit the pattern predicted by the quotation account, at least in the version of Maier (2017) that allows for attraction-driven unquotation. In this section we set out to empirically investigate the attraction hypothesis: salient individuals, entities, places in the utterance context will attract the use of indexicals. Applied to role shift that means that reporters may use unshifted indexical pointing signs inside role shift to refer directly to salient entities in their immediate surroundings.

So far, the evidence for mixed indexicality in role shift, let alone for the more specific attraction hypothesis, is anecdotal at best. We have a handful of LSC and DGS examples of mixed indexicality, involving a variety of different contexts, indexicals, and based on judgments of a handful of signers. The LSC data are based on Quer eliciting judgments from a single LSC informant, and Hubl, Steinbach, and Herrmann's DGS examples are likewise based on working together closely with a few informants. Engberg-Pedersen (1995) has discussed some related mixed indexicality cases from a corpus of naturally occurring data in DSL (Danish Sign Language), but we can't really expect to find enough examples of mixed indexicals in role shift in the limited sign language corpora available to systematically investigate the attraction hypothesis that way.

Maier's NGT data (based on unpublished work in collaboration with Martine Zwets) were elicited in a more systematic fashion, by constructing a video-based questionnaire and distributing that as an online survey to a larger number of linguistically naive, native signers. The results bode well for the attraction hypothesis. Hence, we set out to improve on Maier & Zwets's promising NGT design, for example by using only native signers in the videos.

4.1 Method

We took Maier & Zwets's pilot study as a starting point for the development of an online questionnaire on indexical shifting in role shift in DGS. This study focused on three indexical pointing signs, namely IX1, IX2, and HERE. The main hypothesis was that role shift allows attraction, i.e. salient entities in the reporting situation may be referred to directly, with an appropriate indexical pointing sign, even if that violates the general verbatimness constraint on quotations that requires maximally faithful reproduction of the original signs (where the faithfulness norm is context dependent).

Participants

Due to technical problems, in the first run of the online questionnaire some participants abandoned the study during or right after the introduction video. In the second run, 6 native signers of DGS participated (either deaf child of deaf parents, or acquired DGS before age 5), one of which had to be excluded because of inconsistent responses on the control items. The 5 remaining participants were between ages 26–31 (3 female, 2 male). All participants confirmed that DGS is the language they use in everyday life.

Procedure

The study is a controlled data elicitation with the help of an online questionnaire. The software OnExp was used to create the questionnaire. The questionnaire started with an instruction video in which a native signer explained the procedure and introduced the protagonists who will appear in the videos. Sign names were established for the protagonists, which were then consistently used in all videos. The participants were informed that they would see sequences of two videos, where the second one was always meant as a report of the utterance in the first. Participants were asked to rate on a 6-point scale if the report in the second video was felicitous, with 1 = not felicitous, 6 = completely felicitous. At the end of the instruction video, participants were asked to rate two test items, and whether they wanted to proceed or watch the instruction again. The actual questionnaire consisted of 50 short videos, each consisting of an original utterance followed by a report. Every participant saw the items in a different random order. After the test items, relevant metadata were collected (gender, age, hearing status, age of acquisition, etc.).

Items are divided in four categories: IX1 items, IX2 items, HERE items, and fillers/controls. Below we discuss each of these in detail. The complete list of items can be found in the Appendix. We used the frequent agreement verb INFORM to introduce our role shifts. The native signers that appear in the videos were asked to sign as naturally as possible and not to overact. Following our native signer's intuition, role shift was marked somewhat subtly, primarily by a shift in eye gaze.

IX1 items

The first person items were meant to test the prediction of the attraction theory that the signer herself may or must refer to herself by pointing to herself, even inside a role shift that reports an earlier utterance that used a name to refer to her. Concretely, the original utterance video shows Felicia talking about Tim and herself:

(24) Felicia signs: SATURDAY NEXT TIM WITH IX1 DANCE

'Tim goes dancing with me on Saturday.'

The report video that follows shows Tim using role shift to report what Felicia signed. We contrasted two prima facie possible ways for Tim to do this. Tim might just reproduce Felicia's utterance verbatim (thus repeating his own name), as in (), or he might, as the attraction theory predicts, choose to forego verbatimness and refer to himself in the first person (i.e. requiring an unshifted interpretation of IX1 in role shift).

(25)   Tim reports: FELICIA 3INFORM1: $\overline{\text{SATURDAY NEXT TIM WITH IX1 DANCE}}$
                            'Felicia told me, "Tim is going dancing with me on Saturday"'

(26)   Tim reports: FELICIA 3INFORM1: $\overline{\text{SATURDAY NEXT IX1 WITH IX1 DANCE}}$
                            'Felicia$_i$ told me$_j$, "[I$_j$'m] going dancing with me$_i$ on Saturday."'

We'll refer to the combination of the original utterance in (24) and the verbatim report in (25) as the 'verbatim condition', and to the combination of (24) and (26) as the 'attraction condition'. For our other two indexicals we constructed a third condition which is neither compatible with the attraction, nor with the verbatim assumption, but where the report still preserves the proposition expressed by the original, viz. that Tim is going dancing with Felicia. In the current case that would involve Tim reporting 'Felicia told me "Tim is going dancing with Felicia"'. We didn't test this because we wanted a shifted IX1 in all our role shifts to block the possibility of an indirect discourse interpretation (i.e. a reading simply ignoring the subtle role shift marking).

IX2 items

The setup of the second person items was similar, except that we added a third condition. In every condition the original utterance is about Anna, who reappears as the addressee of the report. Parallel to the IX1 case we have an original utterance referring to Anna by name, and either a verbatim role shift report, or an attraction report replacing the name with a IX2 pointing to the current addressee.

(27)   Verbatim condition
        Felicia signs: IX1 DREAM ANNA IX3 LOTTO WIN
                            'I have dreamed that Anna won the lottery.'
        Tim reports: FELICIA 3INFORM1: $\overline{\text{IX1 DREAM ANNA IX3 LOTTO WIN}}$

(28)   Attraction condition
        Felicia signs: IX1 DREAM ANNA IX3 LOTTO WIN
                            'I have dreamed that Anna won the lottery.'
        Tim reports: FELICIA 3INFORM1: $\overline{\text{IX1 DREAM IX2 LOTTO WIN}}$
                            'Felicia told me, "I have dreamed that [you] won the lottery."'

As a negative baseline condition we also used a variant that was neither verbatim, nor involved attraction, i.e. one where the original used an indexical IX2 to refer to Anna, and the reporter used her name instead. An indirect-discourse-based analysis of role shift – either with or without monstrous context shifts – might predict that this is felicitous, as the proposition expressed by the original is preserved in the report.

(29)　Non-verbatim/non-attraction condition
　　　Felicia to Anna:　　IX1 DREAM IX2 LOTTO WIN
　　　　　　　　　　　　　'I have dreamed that you won the lottery.'
　　　　　　　　　　　　　　　　　　　　　　　　　　　‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾
　　　Tim reports to Anna:FELICIA 3INFORM1: IX1 DREAM ANNA IX3 LOTTO WIN
　　　　　　　　　　　　　'Felicia told me, "I have dreamed that Anna won the lottery."'

HERE items

Finally, we investigated to what extent signers accept deviations from a verbatim report with the locative indexical HERE. Like person indexicals, HERE is a pointing sign, involving the index finger pointing down to the floor right in front of the signer. In order to refer to salient locations with familiar names we replaced the blue screen with a characteristic scene of London or Berlin. As with IX2 we have two originals and two reports, which we combine into three conditions:

(30)　Verbatim condition
　　　Felicia signs: IX1 WISH LONDON IXL LIVE
　　　　　　　　　　　'I would like to live in London.'
　　　　　　　　　　　　　　　　　　　　　　　‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾
　　　Tim reports, in London:　　FELICIA 3INFORM1: IX1 WISH LONDON IXL LIVE
　　　　　　　　　　　　　　　　'Felicia told me, "I would like to live in London."'

(31)　Attraction condition
　　　Felicia signs: IX1 WISH LONDON IXL LIVE
　　　　　　　　　　　'I would like to live in London.'
　　　　　　　　　　　　　　　　　　　　　　　‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾
　　　Tim reports, in London:　　FELICIA 3INFORM1: IX1 WISH HERE LIVE
　　　　　　　　　　　　　　　　'Felicia told me, "I would like to live [here (=London)]."'

(32)　Non-verbatim/non-attraction condition
　　　Felicia in London:　　IX1 WISH HERE LIVE
　　　　　　　　　　　　　　'I would like to live in London.'
　　　　　　　　　　　　　　　　　　　　　　　‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾
　　　Tim reports, in London:　　FELICIA 3INFORM1: IX1 WISH HERE LIVE
　　　　　　　　　　　　　　　　'Felicia told me, "I would like to live here."'

Fillers/controls

The questionnaire was padded with an additional 24 videos without indexicals. These items served as fillers but also as controls to see if our setup works. There are three different types of such fillers. To illustrate, consider the following original:

(33)　Felicia:　　　POSS1 FAVOURITE DRINK WHAT COFFEE
　　　　　　　　　　'My favourite drink is coffee.'

We paired this with a simple verbatim report, and a, seemingly non-verbatim report that does not match the original at all, to get some baseline information.

(34)　Verbatim control condition:　　　‾‾
　　　Tim reports:　FELICIA 3INFORM1: POSS1 FAVOURITE DRINK WHAT COFFEE

'Felicia told me "My favorite drink is coffee"'

(35) Mismatch control condition:
Tim reports: FELICIA 3INFORM1: POSS1 FAVOURITE DRINK WHAT MILK
'Felicia told me "My favorite drink is milk"'

If the setup works, the verbatim control condition should be judged maximally felicitous, and thereby establishe a positive baseline against which to compare the indexical data. Likewise, the no-match condition should give us a negative baseline. We added a third type of filler where Tim's report changes the form of Felicia's original utterance without changing the truth conditional content. This includes items with synonym substitutions, e.g. a different sign for coffee in (36), items with different constituent orders, and reports leaving out interjections.

(36) Form-mismatch condition:
Tim reports: FELICIA 3INFORM1: POSS1 FAVOURITE DRINK WHAT COFFEE2
'Felicia told me "My favorite drink is coffee2"'

The form-mismatch condition was meant to see whether signers are really sensitive to the form of the original or rather just to its semantic content – independently of indexicals and attraction.

4.2 Results and Discussion

Let's start with some general caveats. Our study's design and the small number of participants do not allow for any statistical analysis of the responses, so it should be regarded as a controlled data elicitation. The validity of the results may not be comparable with psycholinguistic studies on large numbers of participants, but the systematically controlled, quantitative measurements may well be more reliable than some of the earlier studies in sign language linguistics that rarely comment on how the data they deal with were created. Given that sign languages are not standardized to the same extent as spoken languages, and that DGS is not a regular school subject (neither at schools for the deaf, nor in the general school system), it is not surprising that participants usually do not choose the highest resp. lowest values of a scale since they have relatively little meta-linguistic awareness concerning their own language and they are not used to judge utterances in their language as well-formed, grammatical, felicitous, etc.

That said, let's start with our fillers, so as to set a baseline for the rest of the data.

Condition	Average rating
Mismatch control	1.275
Verbatim control	4.05
Form-mismatch	3.25

Table 1: Average acceptability of filler and control conditions

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Results on the first two conditions were as expected.[2] The verbatim reports on average are judged 4.05 out of 6, and the no-match reports 1.275 out of 6. Indeed, all other conditions in the survey lie in between these extremes. We take this as evidence that our setup works as intended, so the ratings concerning the critical items can be taken seriously.

The results on the form-mismatch condition were surprisingly high. Apparently, our participants allow reporters to substitute synonyms, move things around, and drop certain particles/interjections in role shift reports. Since this condition includes various distinct manipulations with very few items, we will just leave this as a suggestion for future research to explore in detail.

Table 2 shows the average scores on the items with indexicals.

Condition	IX1	IX2	HERE
Verbatim Condition	3.55	2.6	3.8
Attraction Condition	2.45	3.55	2.9
Non-verbatim/non-attraction Condition		2.25	2

Table 2: Average acceptability ratings of main experimental conditions

The first thing to note is that the non-verbatim/non-attraction items were rated lowest. In fact, these items were pretty close to the negative baseline established by our no-match control condition, despite the fact that these items did preserve propositional content in reporting while the no-match items just reported something completely different. We take this as evidence that preservation of content is not the sole criterion for felicitous reporting, which points in the direction of a quotational analysis (with or without attraction) rather than an indirect discourse analysis (with or without monstrous indexical shifter). Somewhat puzzlingly, recall that the form-mismatch filler data point in the opposite direction. Moreover there may be independent reasons why these conditions are bad, even on an indirect discourse approach. So, further research is definitely needed. For now, we can conclude that the non-verbatim/non-attraction items were rated low, as predicted by quotational approaches.

When we compare the attraction and verbatim condition we see first of all that the IX2 data confirm the prediction of the attraction analysis. Thus, when signers report something that was said about the current addressee, they prefer pointing at that addressee over reproducing the addressee's name sign verbatim (if that name was used in the reported original utterance). This is exactly what attraction predicts: the current addressee is salient and thus attracts the use of pointing signs. We can model the semantics in terms of quotation and unquotation, and the pragmatics in terms of the attraction constraint, as suggested in section 3.2.

Unfortunately, the attraction prediction is not confirmed for HERE and IX1. In our setup, participants preferred to reproduce a name sign even though the context was set up to allow direct reference with an (unshifted) indexical. Below we'll discuss some possible reasons for our findings with IX1 and HERE.

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2   As noted above, one participant was excluded from the analysis. The reason was that he consistently assigned values of 2 or 3 to all items, including these control items. Such a rating behaviour was not found with any other participant, so we excluded the participant and only report the results of the remaining 5.

Regarding the IX1 data, we suspect that it was the combination of a shifted and an unshifted IX1 in close proximity in the same clause that was confusing, and hence led to participants preferring the less ambiguous verbatim report.[3] We suspect therefore that attraction might still occur if the report does not contain a shifted IX1 alongside the unshifted item. To test this, however, we'd need some other means to enforce a role shift interpretation (e.g. another shifted indexical/expressive or more exaggerated role shift marking). If this explanation is on the right track, we should also expect that reports with shifted IX2 alongside unshifted IX2 would be dispreferred as well. However, Maier & Zwets did find that some examples of shifted and unshifted IX1 clause mates were judged felicitous in NGT. Perhaps, other factors could play a role, e.g. the order of shifted and unshifted clause mates (or their relative scope, as in the related *de re* blocking effect, cf. Anand 2006) and/or the distance between them. Finally, looking more closely at the individual data, we see that one of the five participants did strongly prefer the attraction option over verbatim reports with IX1 – in fact, this signer rated three of the four attraction items with 5 or 6, whereas verbatim reports received very low ratings, while the other four participants showed the opposite pattern, strongly preferring verbatim over attraction.

Regarding the HERE data, note first that the attraction option was not completely rejected since the examples in question receive an average value of 2.9 out of 6, though, the verbatim report is still clearly preferred. One possible explanation could be that the blue screen manipulation was too artificial to support the use of an indexical sign to refer to London or Berlin, especially since all other videos showed just the abstract blue background. A follow-up study could use more authentic real-world settings, e.g. the signing actors are filmed in an office, a kitchen, garden etc. and then refer or name their actual location.

5. Conclusion

The first aim of our paper has been to compare two semantic approaches to role shift in sign language: the quotation approach and the monstrous operator approach. Earlier versions of both theories struggle to explain mixed indexicality phenomena, as observed in LSC, DGS, NGT and DSL. This is because (i) most traditional semantic analyses of quotation have the effect of shifting all indexicals in their scope, and (ii) monstrous operators crosslinguistically tend to obey SHIFTTOGETHER, which has a (superficially) similar effect. In addition, such classic implementations of both quotation and monsters alike fail to account for non-linguistic aspects of role shift, such as action role shift and non-manual iconicity effects within attitude role shift.

The second aim of our paper has been to show how recent advances in quotation semantics help overcome the limitations of the quotational approach. To deal with mixed indexicality we coupled a formal semantic implementation of the demonstration theory of quotation, with a general pragmatic principle of attraction: salient entities in the speaker's or signer's environment attract the use of directly referring indexicals. The resulting theory predicts that signers will 'unshift' indexicals (pointing signs, in particular) within the scope of a role shift whenever they can use them to pick out something in their surroundings, such as their addressee, their current location, or themselves.

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3   This is reminiscent of Herrmann and Steinbach's (2007: 166–167) discussion of similar examples where they conclude that "pragmatic constraints and narrative perspective play a role" which may lead signers to prefer indirect discourse over role shift.

The third and final aim of our paper has been to put this new theory to the test. We carried out a controlled elicitation task in the form of an online survey taken by native DGS signers. Among other things our data confirm the predictions of the quotation/attraction hypothesis in the IX2 condition: signers prefer an IX2 ('you') embedded in role shift to refer to the actual addressee, thereby systematically violating SHIFTTOGETHER. Results for two other conditions, involving IX1 and HERE in role shift were inconclusive.

In recent years the theoretical debate about the semantics of role shift has evolved considerably, to a point where we can draw concrete, subtle and testable predictions from the competing theoretical frameworks. We hope that this paper will serve as a small step toward that next stage of research, paving the way for more rigorous, larger scale empirical investigation of role shift in sign languages, and of demonstration or iconicity in language more generally.

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