

Elena Koulidobrova (Central Connecticut State University) and  
Diane Lillo-Martin (University of Connecticut)

## A ‘point’ of inquiry: The case of the (non-)pronominal *IX* in ASL

**Abstract:** It has been claimed that in American Sign Language (ASL), the sign glossed as *IX* is used for a variety of functions, including personal pronouns, locatives, and determiners (Meier and Lillo-Martin 2013). We propose to unify these disparate functions by analyzing *IX* as a demonstrative, appearing with or without an overt complement. Appealingly simple, this move accounts for a wide range of facts regarding the distribution and interpretation of *IX*. We focus on points to third-person referents. Such points are directed toward loci – real people, objects, or locations in the physical space around the signer, or places (possibly arbitrarily) associated with their referents in the signed discourse (Lillo-Martin and Klima 1990). The loci themselves raise considerable interesting issues (Barberà 2012, Gagne and Davidson 2014); however, their contribution is often conflated with the contribution of *IX* alone. Thus, we specifically ask: for a sign involving pointing, what is the nature of *IX* (i.e. the lexical item realized in a pointing hand-shape) when dissociated from the issue of locus (i.e. the space where it points to)?

**Keywords:** sign language, pointing, index, locus, demonstrative, definiteness

### 1 Introduction

Having a pronoun – or an expression that is able to function as one – has become thought of as a primitive of linguistic theory. For instance, in syntax, pronominal expressions serve as diagnostic tools for the size of the c-command domain and ellipsis identification (e.g. Saito 2007, i.a.); in semantics, they are taken to diagnose operator-variable relations (see Heim & Kratzer 1998); in phonology, they are employed in the discussion of prosodic phrasing and stress (e.g. Selkirk 2005); in pragmatics, they are argued to reveal the ‘accessibility hierarchy’ (as in Ariel 1990). Many of these properties are necessarily contingent on the form of the pronoun under consideration. For example, more accessible antecedents have been argued to be picked out by pronouns that are less prominent in form (null » weak » full; Ariel 1990); personal pronouns have been argued to refer to subjects more readily than to objects, while demonstratives tend to refer to objects rather

than subjects (Bosch 2006, i.a.); and in certain binding configurations (such as donkey-anaphora), personal pronouns are possible while demonstrative ones are not (Wiltschko 1998). The characteristics just listed gloss over a number of important features of anaphoric expressions, yet they make a point: while pronouns may very well be expected to exist in a language (i.e. the burden of proof to the contrary lies with the alternative view), the form of such expressions matters.

In fact, accurate categorization of expressions of this sort may result in a simpler theory. Consider, for example, the following scenario: a researcher mislabels a lexical item 'X' as an item of type 'Y.' If an independent analysis of elements of type 'Y' exists, and the researcher attempts to reconcile her findings with this analysis, she may encounter various problems, precisely due to the fact that the element in question is not 'Y.' She then may propose a new account of 'Y,' whose sole purpose is to accommodate the findings. Accidentally, she may arrive at an improved analysis of 'Y'; however, this possibility is a fluke. The fact of the matter is that a mislabeling has occurred. Perhaps the previously advocated view of 'Y' suffices, even if it does not apply to 'X.' In fact, were the element in question labeled correctly as 'X,' the standard account of 'X'-type expressions would have predicted its distribution.

In this paper, we suggest that a mislabeling of this sort has occurred in the study of the so-called 'personal pronominal' ('Y' in the analogy above) expression in American Sign Language (ASL): much literature in sign linguistics refers to the relevant lexical item in these terms (see Sandler and Lillo-Martin 2006 and references therein). Yet, we demonstrate that on a number of diagnostics, the element in question behaves as something other than what it is typically labeled. We further show that such behaviors do not require any special account but fall out rather nicely from the view that it is actually something else (i.e. our 'X'). Concretely, in ASL, the form commonly considered to be a personal pronoun is a point to some area of space, which we gloss *IX* (a.k.a. INDEX and PRO in Sign Language literature).<sup>1</sup> We describe this element in more detail in the next section. An (nearly) identical form is used for a number of other functions – *IX* has been described

---

<sup>1</sup> We will use the following conventions for notation. Signs are glossed in upper case words that are their closest translation equivalents; '#' indicates that the lexical item that follows is finger-spelled. Lower-case letters appended to sign glosses refer to spatial loci; the letters do not stand for particular locations in space (which are often arbitrarily assigned), except for 'neu' (neutral space) – an area in front of the signer with no assigned locus. *IX* followed by a word in parentheses indicates that the point was directed at the object named, e.g. *IX*(phone). A line above glosses indicates non-manual marking; 't' stands for topic marking and 'wh' for wh-question marking. Somewhat unconventionally (but replicating the relevant source), we use '*CL IX*' for a two-handed construction involving a '1'-classifier signed with a non-dominant hand and *IX* with the dominant one.

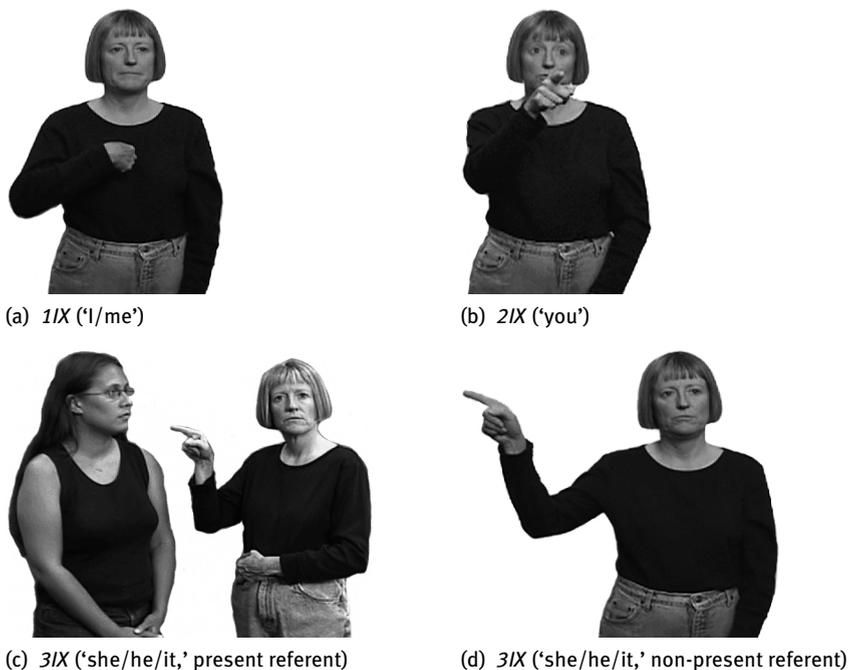
as a definite determiner and a locative adverbial as well as a personal pronoun (MacLaughlin 1997). In much work on pronouns in ASL, authors explicitly state that they are not planning to subsume all instances of *IX* under the same analysis; rather, they address only a subset of the cases in which *IX* appears. What we will try to do here instead is open the possibility that a unified account can be offered for all linguistic cases of *IX*. The essence of the claim is this: even when it seems to behave as such, ASL *IX* is not a *personal pronoun* per se (pace what is commonly claimed in the literature); rather, it is a *demonstrative* expression (Kaplan 1989, i.a.). Such a view, it seems, allows us to capture various behaviors of *IX* that are ordinarily set aside by the alternative accounts.

## 2 Description

We begin this venture with the intuition that the form of the lexical item under examination here is not accidental – *IX* is identical to the co-speech pointing gesture employed in many spoken languages and frequently used along with a demonstrative to pick out a particular (typically present) referent in discourse. The photos in Figure 1 below illustrate the basic forms: pointing to the self (Figure 1a; glossed here as *1IX*) as a 1<sup>st</sup>-person, pointing to the addressee (Figure 1b; *2IX*) as a 2<sup>nd</sup>-person (though its status is controversial; see Meier 1990), and pointing to other (Figures 1c and 1d; *3IX*) as a 3<sup>rd</sup>-person forms. In the ‘other’ cases, the sign is directed either toward a referent physically present in the situation (Figure 1c), or toward a location that is established as associated with a particular referent (Figure 1d).

Johnston (2013), in his attempt to identify the ‘purely pronominal points,’ notes that “pointing signs in Auslan [Australian Sign Language], and potentially other S[ign] L[anguage]s, may merely be more conventionalized or regularized forms of gestural pointing” (p. 152). To illustrate: we analyzed 80-minute natural language sample of 4 different Deaf adults addressing Deaf children (part of the CLESS corpus, Lillo-Martin and Chen Pichler 2008). We observed 361 instances of *IX*, used to pick out a variety of referents with the distribution given in Table 1. In this data set, *IX* primarily refers to an individual either previously set up in the discourse or one that is explicitly present in some form (see Wulf et al. 2002 for a different type of corpus analysis).

However, for ASL at least, the gestural view of *IX* is difficult to maintain; its linguistic nature can be diagnosed in a number of ways. Here we set aside *1IX* and *2IX* and focus on signs directed at 3<sup>rd</sup>-person referents (using the gloss *IX* as a general term). In our sample, 3<sup>rd</sup>-person *IX* appears to fulfill various roles in the



**Figure 1:** Pointing signs considered pronominal in ASL. Copyright Diane Lillo-Martin. Reprinted with permission.

**Table 1:** Distribution of *IX* in a portion of the CLESS Corpus (Lillo-Martin and Chen Pichler 2008).

Direction of point	Proportion
Self	.17
Addressee	.17
Other, present, +human	.13
Other, present, –human	.50
Other, non-present, +human	.01
Other, non-present, –human	.003
Location	.01

sentence, defined here rather coarsely as: subject, object, location, topic, modifier of a noun (phrase) and some other, as shown in Table 2.

When *IX* is used, its referent must be either physically present (as in Figure 1(c)) or previously established. If the referent has been assigned an area of space prior to uttering of *IX*, *IX* must be signed in the associated area. If the refer-

**Table 2:** 3<sup>rd</sup>-person *IX* in a portion of the CLESS Corpus (Lillo-Martin & Chen Pichler 2008).

Sentence role	Proportion
Subject	.53
Object	.09
Location	.11
Topic	.02
Modifier of N(P)	.04
Other	.21

ent has not been assigned such an area, *IX* may be signed in a neutral location – in front of the signer. The location used for a referent is often called a 'locus' (note that the locus is not a geometric point, but an region with some depth; cf. Liddell 2003). The process of associating a referent with a locus is a complex issue to which we will return, although we will not attempt to fully explain it. In some cases, this process involves signing a name or NP in the location to be used; other cases involve signing a name or NP and then pointing to and/or gazing at a locus.<sup>2</sup> Once a locus has been associated with a referent, informally speaking, pointing to the locus is interpreted in much the same way as a pronoun. For example, in (1), 'Doreen' is associated with the locus labeled 'a'. Subsequently, *a-IX* (signed as in Figure 1 (c) or (d)) is interpreted as referring to Doreen.

- (1) a-DOREEN a-IX TEACH ASL a-IX SKILLED  
 'Doreen<sub>i</sub> teaches ASL. She<sub>i</sub> is skilled.'

A related use of the 3<sup>rd</sup>-person *IX* is that of 'deferred ostention' (Quine 1968; Recanati 1993) – a case when *IX* refers not to the item pointed at directly but to something related to the item which has been made salient, perhaps through context. For example, in (2), the point to the phone is interpreted as referring to the person on the other end of the line (the doctor).

- (2) WHAT IX(phone) SAY, IX(phone) DOCTOR DOCTOR IX(phone), WHAT SAY  
 WHAT IX(phone)  
 'What's the he[pointing at the phone] say? That's the doctor[pointing at the phone]. What does he[pointing at the phone] say?'

<sup>2</sup> When a name, NP, or *IX* is associated with a locus, this will be indicated by the use of a lower-case letter at the beginning of the gloss.

The referent of *IX* need not be human or even concrete. For example, *IX* can be used to refer to propositions, as in (3).

- (3) a-GET #a-JOB DISJ/shift b-GO b-GRADUATE-SCHOOL. a-IX I CAN b-IX IM-POSSIBLE  
 ‘Get a job or go to graduate school? The former I can do, but the latter is impossible.’

In (3), disjunction is achieved by shifting the body between two areas of space: one (area *a*) in which the expression *GET #JOB* was signed and another (area *b*) in which *GO GRADUATE-SCHOOL* is signed (see Davidson 2013 for discussion). From that point on, the area to one side of the signer’s midline can be called locus ‘*a*’, and this locus can now be successfully pointed at; the other side is locus ‘*b*.’

The referent of *IX* must be clearly recoverable from the context. This context may (as in (1)) but does not need to be linguistic, as illustrated in (4).

- (4) *Context: Hankamer attempts to stuff a 9-inch ball through a 6-inch hoop*  
 a. I know I can do it/~~this~~~~[stuff a 9-inch ball through a 6-inch hoop]~~

b.  $\overline{\text{t}}$   
 a-IX 1IX CAN  
 ‘I can do it/that.’

(adpt. Hankamer & Sag 1976: 392)

Among other qualities of *IX* is an ability to serve as an argument which obeys linguistic restrictions such as number agreement, as in (5).

- (5) a-c-STUDENTS WORK HARD. a-c-IX GET-A.  
 ‘The students work hard. They got As.’

The aforementioned uses of *IX* have traditionally been considered to be pronominal (see Meier and Lillo-Martin 2013 for an overview). But one of the chief reasons for viewing *IX* as a (personal) pronoun is the fact that it obeys the Binding Conditions, as illustrated in (6).

- (6) a. a-PETER THINK a-IX SMART  
 ‘Peter<sub>i</sub> thinks he<sub>i/\*j</sub> is smart.’  
 b. BOY a-c-ALL THINK a-c-IX SMART  
 ‘All the boys<sub>i</sub> think they<sub>i/\*j</sub> are smart.’

- c. a-PETER THINK a-IX SMART, b-JOHN SAME  
 'Peter thinks he is smart; John does too.'  
 i. John thinks John is smart  
 ii. John thinks Peter is smart
- d. a-MARY<sub>i</sub> SMART. a-IX<sub>i</sub> TEACH {<sup>OK</sup>a-SELF<sub>i</sub>/\*a-IX<sub>i</sub>}.  
 'Mary is smart. She taught {<sup>OK</sup>herself<sub>i</sub>/\*her<sub>i</sub>}.'

In (6a), *IX* is coindexed with *PETER*; in (6b) it appears bound by the quantifier *ALL*; in (6c), it allows for a sloppy reading (ii.), typical of bound pronouns; in (6d), *IX* cannot be bound within one clause and *SELF* is needed instead.

To briefly summarize then, *IX* in ASL is a linguistic expression that exhibits properties of both linguistic and discourse anaphora. In this, it behaves very much pronominally (cf. Johnson 2009). But this, of course, does not mean that in its form it is necessarily a personal pronoun. What we would like to suggest here is that in fact, it isn't. To make our point more explicit, we will be arguing that ASL *IX* is better analyzed along the lines of the English demonstratives *this/that*.<sup>3</sup> Why might we want to engage in this enterprise? There are a few reasons, which we will briefly mention here; in Section 4 we will explore this possibility in more detail and provide evidence to support it.

### 3 Puzzle

Recent research has uncovered some properties of *IX* that are not typical of personal pronouns. Schlenker (2013) has observed that unlike pronouns in English, *IX* can be used to pick out complement-set reference, even with non-downward entailing quantifiers (cf. Nouwen 2003), as illustrated in (7). This is unexpected on the personal pronominal view of *IX*.

- (7) 1-POSS STUDENT IX<sub>arc-ab</sub> MOST IX<sub>arc-a</sub> a-CAME. IX<sub>arc-b</sub> b-STAY HOME  
 'Most of my students came. They [= the ones who didn't come] stayed home.'  
 (Schlenker 2013: 1)

---

<sup>3</sup> Note that at first glance, such a claim is incompatible with the English in (6a, b):

- (i) Peter<sub>i</sub> thinks that (person)<sub>\*i</sub> is smart  
 All the boys<sub>i</sub> think those (people)<sub>\*i</sub> are smart

We return to this issue in Section 4.2.

In both ASL and the English translation of (7), the same lexical item is used for both groups of students – the ones that came and the ones who did not. In English, use of the same pronominal expression to denote both sets is impossible. However, the utterance in ASL is quite natural. Further, Abner and Graf (2012) observe that ASL displays limited obviation with coordinated pronouns, as illustrated in (8). They propose that ASL uses *discourse binding* rather than syntactic binding in such cases. They also point out other reasons to favor the discourse binding analysis of ASL interpretation of *IX*, including its resistance to antecedence by quantified DPs with empty domains.

- (8) ALL<sub>i</sub> WRESTLER<sub>i</sub> INFORM SOMEONE<sub>j</sub> SWIMMER<sub>j</sub> THAT IX<sub>i,j</sub> IX<sub>j,i</sub> WILL RIDE-IN-VEHICLE LIMO GO-TO DANCE  
 ‘Every wrestler<sub>i</sub> told some swimmer<sub>j</sub> that him<sub>i,j</sub> and \*him<sub>j,i</sub> would ride in a limo to the dance.’

(Abner & Graf 2012)

These oddities in behavior – atypical of pronouns – create a justification for considering an alternative. Of course, what would need to be accounted for are cases in which *IX* resembles a personal pronoun. We will be arguing here that such resemblance is just that – a resemblance, and the ability of *IX* to participate in processes characteristic of personal pronouns is only apparent. Instead, we suggest that upon closer examination, *IX* behaves as a demonstrative.

The idea that pronouns are related to demonstratives is not entirely odd. In Eastern Armenian, for instance, demonstratives *na*, *sa*, and *da* are used in lieu of personal pronouns (Kozintseva 1995). The same can be said for the Basque *hau*, *hori*, and *hura* (Saltarelli et al. 1988) as well as the Korean *ku*. While it is not the goal of this paper to argue for a particular theory of the aforementioned elements as well as their counterparts in other world languages, a brief survey of languages represented in WALS shows that out of the 225 languages examined, in 125, demonstratives and 3<sup>rd</sup> person pronouns are morphologically related if not identical, as detailed in Table 3.

However, simply finding that a relationship between demonstrative and personal pronouns is a ‘regular occurrence’ is not enough here. The proposal that *IX* in ASL is a demonstrative has non-trivial consequences. If our proposal is in line with the cross-linguistic data, certain behaviors of *IX* are necessarily expected – namely the behaviors one observes with demonstrative expressions in natural languages. Let us see what this means, beginning with complex demonstratives (those with an NP complement) and extending the discussion to their simplex (a.k.a. bare) counterparts.

**Table 3:** Number of languages in which 3<sup>rd</sup> person pronouns (PProS) and demonstratives show relationships (www.wals.info/chapter43A).

3 <sup>rd</sup> PProS and demonstratives unrelated	= 100
3 <sup>rd</sup> PProS and demonstratives to all demonstratives	= 52
3 <sup>rd</sup> PProS and demonstratives to remote demonstratives	= 18
3 <sup>rd</sup> PProS and to non-remote demonstratives	= 14
3 <sup>rd</sup> PProS and demonstratives by gender markers	= 24
3 <sup>rd</sup> PProS and demonstratives for non-human reference	= 17
Total: 225	

## 4 Proposal: Demonstrative

Demonstratives have puzzled semanticists for quite some time. A number of researchers have argued for a generalized quantifier analysis. Consider (9).

- (9) a. That student who scored 100 % is a genius.  
 b. Most avid skiers remember that first black diamond run they skied.  
 (King 2001)  
 c. Every time I meet a linguist, that linguist talks to me.

We understand (9a) as a case where there is exactly one student who received 100 %, and the property of being a genius holds of that student. (9b) records a case of quantification into a demonstrative: there is no particular skier under discussion, but skiers and black diamond mountains covary. The same could be said for (9c): for every encounter *x*, a different linguist talks to the speaker. In each of the sentences in (9), *that* can be easily replaced with *the* without any visible effect on interpretation. Yet, this is not always so: for all their quantificational behavior, demonstratives often behave like rigidly referring expressions. For instance, consider Nowak's (2013) scenario involving a consistently rigged race such that the person wearing a particular color (say, red) is necessarily the winner because that is who the judges have been bribed to award the win to. In such a context, demonstratives disallow the covarying interpretation while [*the NP*] allows it (i.e. whoever wears the red shirt always wins):

- (10) a. That guy in the red shirt always wins = referential/\*quantificational  
 b. The guy in the red shirt always wins = referential/quantificational  
 (Nowak 2013)

The reason for this difference remains somewhat unclear, and at least some of the literature capitalizes on the fact that such rigidly referring cases are typically understood as involving a demonstration.

- (11) a. [pointing at the man]That red haired man is an Australian.  
(King 2008: 2010)
- b. That chair is that chair [with appropriate demonstrations]  
(Heim 1991, ctd. in Roberts 2003: 99)
- c. Mary actually pulled a red scarf from the drawer, but that scarf [pointing at the scarf] could have been blue  
(Wolter 2006: 196)

Roberts (2003), following the original intuitions in Kaplan (1989), offers an account of this demonstration, articulated informally below.

- (12) [...] Demonstratives and definite descriptions are both types of definite NPs, and hence both have presuppositions of familiarity and informational uniqueness. The difference between them is this: the demonstrative, but not the definite description, *carries a presupposition that the discourse referent which makes it familiar is anchored by information in the common ground to an individual in the world which is directly indicated by the speaker at the time of utterance of the demonstrative NP.*<sup>4</sup>  
(Roberts 2003: 130; italics are ours)

Demonstratives also exhibit another characteristic: they seem to generally prefer different discourse antecedents than other definite descriptions do (see Bosch

---

#### 4 Formally:

Given a context of evaluation  $C$ , with common ground  $CG$  s.t.

$DomCG \subseteq DomC$ , and discourse referent  $S$  s.t.

$\forall i \in DomCG \forall \langle w, g \rangle \in SatCG[speaker(w)(g(i)) \leftrightarrow i = S]$ ,

(i)  $\exists \delta [\delta \in DomCG \& \forall \langle w, g \rangle \in SatCG[demonstration(w)(g(\delta)) \& accompanies(w)(g(\delta), utterance(NP_i))]] \&$

(ii)  $\forall j \in DomCG [\forall \langle w, g \rangle \in SatCG[+(-)proximal(w)(g(j), g(S)) \& demonstratum(w)(g(j), g(S), \delta)] \& \forall k \in DomCG [\forall \langle w, g \rangle \in SatCG[+(-)proximal(w)(g(k), g(S)) \& demonstratum(w)(g(k), g(S), \delta)] \rightarrow k = j] \& Desc(w)(g(j))] \&$

(iii)  $j = i$  ] where  $Desc(w)(g(i))$  is true iff the individual assigned to  $i$  by  $g$  has the property denoted by  $Desc$  in world  $w$ ; and  $+(-)proximal(w)(g(j), g(S)) \& demonstratum(w)(g(j), g(S), \delta)$  is true iff the individual assigned to  $j$  by  $g$  is in the set of entities (non-)proximal to the speaker  $g(S)$  and is the demonstratum intended by  $g(S)$  for the demonstration  $g(\delta)$ .

(Roberts 2003: 118)

et al. 2007 and references therein). This is illustrated in (13), where the demonstratives cannot be interpreted as picking out the subject of the previous sentence.

- (13) a. Paul<sub>i</sub> wanted to go running with Peter<sub>j</sub>. But {the guy<sub>i,j</sub>/he<sub>i,j</sub>/that guy<sub>j,\*i</sub>} had a cold.  
 b. The patient<sub>i</sub> was examined by the doctor<sub>j</sub>. {The guy<sub>i,j</sub>/he<sub>i,j</sub>/that guy<sub>j,\*i</sub>} was prepared.

This property of demonstratives has been described in various ways: as 'non-subject orientation' (cf. Bosch 2006, i.a.), as referring to the 'anti-aboutness topic' (Hinterwimmer 2014), or to a 'non-default situation' (Wolter 2006), among others.

Whatever the final account, decades of formal examination have now yielded a fairly clear empirical picture: among definite descriptions, demonstrative expressions are special. In some contexts they are interchangeable with personal pronouns and overt noun phrases headed by the definite article (as in (15a)). In other contexts demonstrative expressions pattern on par with *either* pronouns (as in (14a), (15b), and (17)) or with overt [*the NP*] (as in (14b) and (16b)).

- (14) a. [pointing at a man] {That man/\*the man/he} looks friendly.  
 b. {That man/the man/\*he} by the fireplace looks friendly.
- (15) a. A man walked in.  
       {That man/the man/he} handed a flyer to another man.  
 b. A man and a woman walked in.  
       {\*That man/the man/he} was smiling.
- (16) a. {\*That center of the universe/the center of the universe/#it} is moving.  
 b. {Those members of Congress who voted against the bill/the members of Congress who voted against the bill/#they} have proposed a new initiative.

(adptd. Wolter 2006: 22)

- (17) A bishop met another bishop on a dusty road.  
 {That bishop<sub>j,\*i</sub>/the bishop<sub>i,j</sub>/he<sub>i,\*j</sub>} sneezed.

In order to differentiate between the relevant uses of *IX* then, it seems that what we need is a context in which demonstratives are licit and pronouns are not (as in (14b) and (16b), for example). Considering that in a number of such contexts [*the NP*] remains a possibility, this option will need to be considered as well. Incidentally, a number of works in the literature, going back to Evans and more recently

articulated by Elbourne (2005), i.a., have argued that semantically, a pronoun and definite article are very much related: pronouns are definite descriptions involving NP ellipsis. Simplistically, this means that in (18), for example, *he* is really *the bishop* with the N (*bishop*) unpronounced and *the* realized as *he*.

(18) When a bishop meets a bishop, he blesses him

In fact, Elbourne (2005) provides the following lexical entry for *the* and *it* in English:

(19)  $[[\text{the}]]^g = [[\text{it}]]^g = !f_{\langle\langle s,e \rangle, \langle s,t \rangle\rangle} \cdot \lambda s : \exists! \lambda x f(\lambda s.x)(s) = 1. \text{ix } f((\lambda s'.x)(s)) = 1$   
(Elbourne 2005: 51)

Our argumentation then will proceed as follows: we first demonstrate that *[IX NP]* cannot be equated with *[the NP]* – i.e. prenominal *IX* is not a definite article. This move will allow for a cleaner comparison between personal pronouns vs. demonstratives.

#### 4.1 Is *IX* a definite article?

Assuming the view often advocated in the literature since Postal (1966), a pronoun is, in fact, something like a definite article (give or take a few presuppositions, as in Schlenker 2003) with an elided, or unsaturated, NP argument (cf. Elbourne 2005). A two-fold prediction arises: (a) in non-elliptical cases, *IX* followed by an NP will behave on par with a definite article, and (b) undoing the ellipsis of/saturating the NP argument will yield no visible difference in meaning – i.e., a definite description of the sort *[IX \_\_\_]* ought to behave similarly to *[IX NP]*, at least in cases where it is true for similar expressions in other languages. If there is a difference, it is expected to be subsumed by a general account of the difference between *[the NP]* vs. *[he \_\_\_]* on the traditional view of *IX* and *[that NP]* vs. *[that \_\_\_]* (also known as ‘complex’ vs. ‘bare’ or ‘simplex’ demonstratives) on our.

The literature offers no shortage of discussions related to the contribution of the definite article. Much of the field, following Frege (1893), assumes that a definite description headed by a definite article expresses a proposition which is either unique (Russell 1905, i.a.) or familiar (Heim 1982, i.a.; for an extended discussion of the two views, see Elbourne 2005). For the purposes of this discussion, we assume the Fregean view of the expression *the P*: the uniqueness condition is a presupposition. For instance, the expression *the Kind of France is bald* receives the interpretation as in (20a). We also assume, with Wolter (2006), for example, that

a definite description is interpreted relative to a situation which may be default or not (although nothing here is contingent on this particular view; it simply allows a convenient demonstration of the facts).

(20) a. Bald (*IX*. *King Of France* (*x*))

defined if and only if there is a unique King of France;  
true if and only if the unique King of France is bald,  
else, false.

(Schwarz 2009: 9)

b. A sentence of the form [*the A*] *B* presupposes that there exists a unique individual which is *A* in  $s_n$  and asserts that the unique individual which is *A* is also *B* in  $s_n$ .

c.  $s_n$  = 'default' situation (discourse context)

d. Given a sentence *S*, a situation variable *s* is a default situation just in case it is bound in *S*. Otherwise  $s_n$  is a non-default situation.

e. A default situation is a situation relative to which the main predicate of a clause is interpreted and the truth value of the clause is calculated.

(Wolter 2006: 64)

The expectation then is that if some lexical item is best described as a definite article, it ought to behave in the manner described in (20).

MacLaughlin (1997) argues that *IX* as in (21) – specifically, 'pronominal *IX*' – encodes definiteness in ASL and is best described as a definite article.

(21) *IX*<sub>DET</sub> WOMAN BORROW VIDEOTAPE

'The woman borrowed the videotape.'

(adptd.<sup>5</sup> MacLaughlin 1997: 124)

However, as has been argued elsewhere (Koulidobrova 2012, submitted), pronominal *IX* fails various tests for being a definite article, behaving, instead, as a different type of element. Let us illustrate.

The semantics in (20a) predicts *the* (and, by the temporary hypothesis, *IX*) to occur in so-called 'global uniqueness' cases. We see this in English in (16a): the universe is expected to have only one center; yet, *the* precedes the NP. Notice that

---

<sup>5</sup> The sentence has been adapted – in the original, a postnominal *IX* is also present. However, at this point it detracts from the focus of the argument; nothing in our analysis (or in MacLaughlin's for that matter) hinges on the presence or absence of the postnominal *IX* in this utterance. We return to the issue below.

a demonstrative in this environment is impossible; intuitively, it requires a larger set from which the relevant individual must be picked out.

As the universe has only one center, so does France have only one capital and, in a typical scenario, a church only one priest. Yet as (20) shows, *IX* is impossible in such environments.

- (22) a.  $\overline{\text{FRANCE}}^t \overline{(*IX) \text{ CAPITAL WHAT}}^{\text{wh?}}$   
 ‘What is the capital of France?’  
 b.  $\text{TODAY SUNDAY. DO-DO.}^{\text{wh}} \text{ GO CHURCH, SEE } (*IX) \text{ PRIEST.}$   
 ‘Today is Sunday. What to do? I’ll go to church, see the priest.’

But perhaps the problem of *\*IX* in (22) is that *IX* must be anaphoric/familiar, and (22) provides no room for such an anaphoric element. This move, coincidentally, is consistent with argumentation in Schwarz (2009), who points out that the typical analyses of the semantics of the definite article (with English as the language of examination) is not fine-grained enough. In fact, it is best to distinguish between its *weak* uses (encoding uniqueness and part-whole relations) and *strong* uses (encoding familiarity and anaphoricity). The *weak* environment we have already examined (cf. (22)) and discovered that the ASL *IX* does not behave the way a definite article is expected to in such cases. It is still necessary to review the behavior of *IX* in *strong* environments.

It turns out, however, that this path leads to a dead-end as well: the anaphoric/familiar *PRIEST* in (23) cannot be preceded by *IX* either.

- (23)  $\text{TODAY SUNDAY. DO-DO.}^{\text{wh}} \text{ GO CHURCH, SEE } \overline{\text{PRIEST}}^t \overline{(*IX) \text{ PRIEST}}^t \text{ NICE.}$   
 ‘Today is Sunday. What to do? I’ll go to church, see the priest. The priest is nice.’

Compare then the use of *IX* in ASL with *the* in the translation sentences in English. In both cases necessarily involving the definite article in English (i.e. (22) and (23)), *IX* is impossible, and *PRIEST* remains obligatorily bare. In other words, whatever the definite article encodes – uniqueness or familiarity (see Schwarz 2009 for an extensive overview of the discussion) – *IX* appears unable to do. We thus conclude that the presence of *IX* next to the NP (or in lieu of it) signals something else.

Taking a step back, let us now consider the alternative: what does it mean when we say that *IX* is not a definite article? Assuming that a definite article necessarily requires a ‘default’ situation as in (20), the prediction arises that in contexts that are distinct from such situations (i.e. ‘non-default’, e.g. where potential alter-

natives must necessarily be considered), a definite article will be impossible but *IX* might be allowed. The prediction is borne out for [*the NP*] cases below; this is true for environments consistent with weak as well as strong definite articles.

(24) *Weak*:

- a. The Pope retired  
 = # if looking at/pointing out the portrait of Benedict among the portraits of other popes  
 = <sup>OK</sup> out of the blue
- b. a-IX POPE RETIRE  
 = <sup>OK</sup> if looking at/pointing out the portrait of Benedict among the portraits of other popes  
 = # out of the blue

(25) *Strong*:

- a. The new priest arrived  
 = # if pointing out Father John among other priests  
 = <sup>OK</sup> out of the blue if both interlocutors know that a new priest has arrived
- b. a-IX PRIEST NEW ARRIVE  
 = <sup>OK</sup> if pointing out Father John among other priests  
 = # out of the blue if both interlocutors know that a new priest has arrived

The data in (24) and (25) are reminiscent of the 'bridging inference' (Clark 1975, i.a.) paradigm – contexts where the definite article alone is licensed and demonstrative ascriptions are impossible (as in (26a)). Yet, as soon as the discourse offers a contrastive interpretation, the paradigm changes and the demonstrative becomes a preferred choice (as in (26b)).

- (26) a. A car drove by. {<sup>OK</sup>The/\*that} horn was honking loudly.  
 b. The girls received individualized reading lists with sections labeled 'on reserve' and 'in bookstore.' Every girl went to the reserve section of the library and read {\*the/<sup>OK</sup>those} books first.

(Wolter 2006: 76, 100)

To summarize then: in all of the cases where a definite article is licit and a demonstrative is not, [*IX NP*] is impossible, and, conversely, in the environments clearly calling for a demonstrative, [*IX NP*] is fine. In light of the data above, we are well justified in arguing that *IX* is not a definite article (see more discussion on the

matter in Koulidobrova, submitted). This is why in the global uniqueness cases, *IX* is quite odd, as shown earlier in (20).

Let us consider further the nature of restrictions on demonstratives by returning to (16a), repeated here as (27).

(27) \* That center of the universe is moving. = (16a)

The demonstrative expression in (27) has an odd reading that there is more than one center of the universe, which of course defies common knowledge. Let us assume, however, that a two-centered universe is possible. This improves (27) dramatically, though only if deixis is involved – it is only possible if the immediate physical surroundings offer a chance at such a demonstration, much as in (14a), repeated here as (28).

(28) [pointing at a man] {That man/\*the man/he} looks friendly. = (14)

However, we now appear to be comparing one of the centers to another, appealing to a contrast of sorts – a reading that [*the* NP] ordinarily does not invoke. This observation is further exemplified in (29).

- (29) a. # *The dogs* are sleeping and *the dogs* are not.  
 b. *Those dogs* are sleeping and *those dogs* are not.

(Dayal 2009: 23)

The same test can be applied to (26) and (27), and the judgments reverse.

- (30) a. That Pope retired  
 = <sup>OK</sup> if looking/pointing out the portrait of Benedict among the portraits of other popes  
 = # out of the blue  
 b. That new priest arrived  
 = <sup>OK</sup> if pointing out Father John among other priests  
 = # out of the blue if both interlocutor know that a new priest joined the parish

We then naturally expect [*IX* NP] to behave differently from [*the* NP] in cases like (14a), (15b), (16a), as well as (10). And so it does: in the context involving the rigged race (see (10)), a quantificational reading arises without *IX*; however, with it, only a referential reading is possible.

- (31) a. The guy in the red shirt always wins = referential/quantificational = (10b)  
 b. {a-IX PERSON/a-IX} RED SHIRT SELF<sup>rc</sup> TEND WIN  
 'IX person/IX in the red shirt tends to win' = referential/\*quantificational  
 c. PERSON HAVE RED SHIRT<sup>rc</sup> TEND WIN  
 'The person in the red shirt tends to win' = referential/quantificational

We thus arrive at the view that *IX* diagnoses as something other than a definite article (either weak or strong) and is licit precisely in the cases one might ordinarily encounter a demonstrative instead.

## 4.2 Is *IX* without an NP a pronoun?

So much for the view that *IX* may (sometimes) be analyzed as a definite article. However, what of the idea that it is sometimes a personal pronoun – the starting point of this discussion?

Let us begin with an empirical observation arising from the data documented in the previous section. It turns out that in cases diagnosing for weak and strong articles (as in (22) and (23)), *IX* alone is also impossible. Note that a (personal) pronoun – a *bona fide* anaphoric expression – should easily be able to refer to the church in (32a, b) and the priest in (32b) as is seen in the English translations.

- (32) a. TODAY SUNDAY. DO-DO<sup>wh</sup> GO CHURCH, SEE {\*IX/<sup>OK</sup>PRIEST} = (22)  
 'Today is Sunday. What to do? I'll go to church, see \*it/the priest.'  
 b. TODAY SUNDAY. DO-DO<sup>wh</sup> GO CHURCH, SEE PRIEST. {<sup>t</sup>\*IX / <sup>t</sup><sup>OK</sup>PRIEST}  
 NICE = (23)  
 '[...] see \*him/\*it/the priest. The priest is nice.'

ASL and English behave in an opposite manner here, corroborating the view that *IX* does not pattern as a personal pronoun: a personal pronoun (such as *it*) should have been able to refer to the church – the NP immediately above *IX*. However, reference to the church is unavailable in (32a). In (32b), another NP enters – *PRIEST*. Nothing precludes *IX* from referring to either of the NPs; yet, this remains impossible.

It seems reasonable, then, to turn to the alternative – demonstrative expressions. The difference between demonstrative expressions and other definite descriptions is typically argued to be presuppositional in nature: personal pronouns and demonstratives are essentially definite articles but with an additional piece that differentiates between them. As we mentioned earlier, Roberts (2003) casts

the presupposition in terms of the presence/absence of the demonstratum. Others approach the difference between the relevant lexical items in terms of distance – both intuitively and formally (cf. Wolter 2006, Elbourne 2008), reliance on the proximal/distal distinction (in terms of space and time) may after all account for the behaviors of demonstratives. The goal of this paper is not to side with any particular account. Instead, we aim to demonstrate that the distribution of *IX* simply follows the distribution of demonstratives. To that end then, we expect the aforementioned characteristics of demonstratives to surface with *IX*.

On an account of personal pronouns similar in spirit to that in (19) and, by extension, (20), a personal pronoun will pick out a maximally salient referent ‘uniquely relative to the situation corresponding to the discourse context’ – the ‘default situation’ (Wolter 2006). This intuition is confirmed in Bosch and Umbach (2006) – in German, P(ersonal)-pronouns (such as *er* below) tend to pick out subjects/discourse-old antecedents – those that are maximally salient from discourse and require no additional descriptive content. In contrast, D(emonstrative)-pronouns (i.e. *der* in (33)) avoid such referents.

- (33) a. Paul<sub>i</sub> wollte mit Peter<sub>k</sub> laufen gehen. Aber {er<sub>i</sub>/der<sub>k</sub>} war erkältet.  
 ‘Paul<sub>i</sub> wanted to go running with Peter<sub>k</sub>. But {he<sub>i</sub>/DEM<sub>k</sub>} had a cold’  
 b. [<sub>DO</sub> Den Patienten]<sub>i</sub> untersucht [<sub>SU</sub> der Chefarzt]<sub>k</sub>. Der<sub>k</sub> ist nämlich Herzspezialist.  
 ‘[The patient]<sub>i</sub> was examined by [the head doctor]<sub>k</sub> DEM<sub>k</sub> is a heart specialist.’

(Bosch et al. 2003: 2)

English complex demonstratives follow this pattern neatly, as shown in (17), repeated here as (34).

- (34) a. A bishop<sub>i</sub> met another bishop<sub>j</sub> on a dusty road. = (17)  
 {That bishop<sub>j,\*i</sub>/the bishop<sub>i,j</sub>/he<sub>i,\*j</sub>} sneezed.

How the reference to the discourse-old information is formalized remains a matter of some controversy. Hinterwimmer (2014), for instance, argues that demonstrative pronouns disallow reference to the *aboutness topic* (Reinhart 1981). Whatever the eventual solution, let us now summarize the descriptive generalization emerging from the relevant empirical observations and previous accounts: a personal pronoun (exemplified by the P-series in German) is a uniquely referring expression, typically interpreted relative to some standard/default situation and picking out a salient antecedent which also happens to be what the sentence is about. The question here is this: is it the case that ASL *IX* qualifies as such an element?

While a focused examination of the paradigm must await further study, the preliminary answer to this question seems to be 'no'. For example, in (35a), we take 'mother' to be the topic/subject/discourse-provided individual. Here, *IX* most naturally refers to either Mary or the sandwich. On the other hand, when SANDWICH is topicalized as in (35b), *IX* most naturally refers to either the mother or Mary.

- (35) a. a-MOTHER<sub>i</sub> PERSUADE b-MARY<sub>j</sub> MAKE SANDWICH<sub>k</sub>.  $\overline{\text{neu-IX}}_{j,k,?i}$  <sup>t</sup> GOOD  
 'My mother persuaded Mary to make a sandwich. *IX* is good.'  
 b. SANDWICH<sub>k</sub> a-MOTHER<sub>i</sub> PERSUADE b-MARY<sub>j</sub> MAKE.  $\overline{\text{neu-IX}}_{j,k,?i}$  <sup>t</sup> GOOD  
 'Mother is persuading Mary to make a sandwich. *IX* is good'

Confirmation of the observation in (35) with more signers is needed (something that seems to be clearly required, judging by the experimental results in German, Bosch 2013), but this preliminary datum points away from the personal pronoun view of *IX*.

Recall also that unlike personal pronouns, demonstratives presuppose a demonstration (and a demonstratum), which, on all accounts, is at the heart of deixis. It seems that if *IX* were a personal pronoun semantically, or at least were able to function as one, it should have happily been able to coindex with a topic/subject NP up the tree and do so without any such demonstration. Yet, recall also that this is impossible in ASL. However, if the signer is pointing at some specific object, which is physically present in the environment and is assigned a locus, the use of *IX* in becomes felicitous. In (36), this object is the church. And while a personal pronoun happily picks out the linguistic object (church), it cannot refer to a part of the physical entity associated with this object (a rose-window) or the general area in physical space. A demonstrative supported by deixis, on the other hand, can (as indicated in the English translation). Notably, *IX* in (36) can refer to either a part of or the whole church (e.g. the rose-window or the building itself), or even the general area in which the church is located.

- (36) TODAY SUNDAY.  $\overline{\text{DO-DO}}$  <sup>wh</sup> GO CHURCH. a-IX NEW. SEEM NICE  
 'Today is Sunday. What to do? I'll go to church. *IX* is new. Seems nice.'  
 a. ... ([pointing]) {It<sub>church</sub>/\*it<sub>window</sub>/\*it<sub>building</sub>/\*it<sub>area there</sub>/  
 \*it<sub>object in physical space</sub>} is new.  
 b. ... [pointing] {That<sub>church</sub>/that<sub>window</sub>/that<sub>building</sub>/that<sub>area there</sub>/  
 that<sub>object in physical space</sub>} is new.



So, in order to bypass the potential issues associated with previous establishment of loci, we examine cases without it by removing the locus for the NP anteceding the *IX* in (37). Not surprisingly, in light of other arguments in this paper, it turns out that the paradigm in (37) changes dramatically, as shown in (39). Thus, the altered sentences remain grammatical but the readings they induce have changed. Much like (37), (39) records utterances compatible with Condition B – a personal pronoun ought to be allowed here. However, now *IX* can no longer refer to any of the previously uttered NPs; it is necessarily disjoint in reference from them.

- (39) a. PETER THINK {a-*IX*/neu-*IX*} SMART  
 'Peter<sub>i</sub> thinks he<sub>j/\*i</sub> is smart'  
 b. BOY ALL THINK {a-c-*IX*/neu-*IX*} SMART  
 'All the boys<sub>i</sub> think they<sub>j/\*i</sub> are smart'  
 c. PETER THINK {a-*IX*/neu-*IX*} SMART, b-JOHN SAME  
 'Peter<sub>i</sub> thinks he<sub>j/\*i</sub> is smart; John<sub>k</sub> does too'  
 = Peter and John think someone else is smart  
 d. FEW CHILDREN THINK *IX*<sub>arc</sub> SILLY  
 'Few children<sub>i</sub> think they<sub>j/\*i</sub> are silly'

Nor, as the data in (39) demonstrate, can the issue be reduced to some type of requirement on locus matching.<sup>7</sup> If this were true, we would expect the following: the paradigm in (39) would once again become grammatical with *IX* uttered in the neutral space (lack of locus) – in front of the body of the signer. It turns out, however, that this move does not help: irrespective of whether *IX* in such a case is uttered at a particular locus (arbitrarily assigned to the right or to the left of the signer) or in a neutral space, reference to the NP (or QP) above is impossible. We take the behavior of *neu-IX* in such cases to reflect the nature of this element as different from a personal pronoun, and the different behavior of *IX* with a locus as something attributable to the contribution of the locus.

The differences in the referring possibilities of *IX* also arise in so-called 'donkey' anaphora in which farmers and donkeys co-vary, as in (40).

(40) If a farmer owns a donkey, he beats it.

Such E-type binding is allowed only when the locus has been previously assigned. Consider (41). In (41a), previous establishment of a locus for ONE STUDENT permits apparent binding of *a-IX* (and the co-referential interpretation is required).

<sup>7</sup> We thank Kathryn Davidson for bringing this to our attention.

On the other hand, when no locus is established, as in (41b), the bound reading is unavailable, irrespective of whether *IX* points to a specific locus or to a neutral location.

- (41) a. WHEN ONE a-CL STUDENT<sub>i</sub> COME PARTY, a-IX<sub>i,\*k</sub> HAVE-FUN.  
 ‘When a student comes to the party, he has fun.’  
 b. WHEN ONE STUDENT<sub>i</sub> COME PARTY, a-IX<sub>\*i,k</sub>/neu-[CL IX<sub>\*i,k</sub>] HAVE-FUN.  
 ‘When a student comes to the party, he has fun.’  
 (Schlenker 2011: 18)

The non-binding behavior of the ‘pronominal’ *IX* in (39, 41b) bears an uncanny resemblance to the demonstrative pronouns in German. For instance, Wiltschko (1998) notes that D-pronouns cannot be interpreted as bound variables:

- (42) a. Peter<sub>i</sub> hat geglaubt, daß er<sub>i</sub>/\*der<sub>i</sub> dumm ist  
 ‘Peter believed that he/DEM is stupid.’  
 b. Jeder Mann<sub>i</sub> glaubt, daß er<sub>i</sub>/\*der<sub>i</sub> dumm ist  
 ‘Every man believed that he/DEM is stupid.’  
 (Wiltschko 1998: 144)

Why this might be remains open to discussion; both semantic and syntactic accounts have been proposed (see, e.g., Hinterwimmer 2014 vs. Patel-Grosz and Grosz, t.v., i.a.). The account advocated by Wiltschko is that a D-pronoun is a definite description; as such, it is subject to Condition C. The very same explanation is available for the ASL *IX*: on the view that *IX* is a pronoun, the difference between (37) and (39) is not immediately clear; on the approach to *IX* as a demonstrative, (40) is excluded as a condition C violation, similarly to (42) and (43b).

- (43) a. Jill<sub>i</sub> thinks that she<sub>i</sub> is nice.  
 b. Jill<sub>i</sub> thinks that {this/the} person<sub>\*i</sub> is nice.

We have now arrived, we think, at a second conclusion: as *IX* preceding an NP can hardly be considered a definite article, neither can *IX* occurring alone be viewed as a personal pronoun. Without the previous establishment of a locus, it cannot be bound; instead, it tends to have a deictic use – i.e. it is picking out some physical object in the environment. At the same time, data suggest that *IX* tends to pick out antecedents that are ‘non-default’ – when the NP it refers to is not a subject/topic and could be contrasted with another NP.

Everything works out nicely if, with and without an accompanying NP, *IX* is a demonstrative. Such an approach to *IX* explains some otherwise puzzling ob-

servations about ASL 'pronouns' previously employed as evidence for modality-related differences between sign and spoken languages: as discussed in Section 3, the possibility of reference to the complement set (Schlenker 2013, (7)), and the lack of syntactic (but, rather, discourse only) binding with *IX* (Abner and Graf 2012, see (8)); and as discussed below, lack of a consistent formational distinction between 'pronominal' and 'locative' pronouns (Johnston 2013). These characteristics fall out naturally from the view that interpretation of demonstratives recruits discourse binding, as has been argued for cases like (44) (see the discussion in Roberts 2003):

(44) That[pointing to a chair<sub>1</sub>] might be that[pointing to a chair<sub>2</sub>]  
(Roberts 2003: 99)

Let us now take this possibility to heart: [*IX* NP] is the ASL counterpart of complex demonstratives ([*this/that* NP]) and *IX* alone is actually something like English simplex demonstratives ([*this/that* \_\_\_\_]). Following previous research, we assume that simplex demonstratives are best viewed as involving some elided/phonologically null material following a demonstrative head. Note where this takes us. Suppose we follow King (2001) or Elbourne (2005) in approaching this elided/null material as contributing the property of 'being a thing' (King 2001: 141–143), an 'individual of type ⟨e⟩' (Elbourne 2005).<sup>8</sup>

The unexpressed 'individual' could be a person or a place. The ultimately locative (in terms of distance and time) nature of demonstratives now allows for an approach to the 'adverbial' (MacLaughlin 1997) postnominal *IX* in the original version of the example amended in (21), repeated in full here as (45), to be subsumed under the same analysis. This second *IX*, which may be translated as *here/there*, is comparable to "this/that place," with the phonologically null *place*.<sup>9</sup>

(45) *IX*<sub>DET</sub> WOMAN *IX*<sub>[variable path length]</sub> BORROW VIDEOTAPE ≈ (21)  
'The woman (more or less far away) borrowed the videotape.'

This approach is particularly plausible since ASL has few overt prepositions, therefore allowing for the possibility of analyzing [*that person there*] as [*that person at that place*]. This line of reasoning offers a prediction: if the phonolog-

<sup>8</sup> In later works (2008, et seq.), the *ONE* is a predicate of type ⟨et⟩ (more accurately, and reflecting Elbourne's situation semantics, ⟨se,st⟩). The unexpressed material is thus ignored for the relevant part of the semantic computation due to vacuous quantification (see a direct comparison of the two views in Elbourne 2008).

<sup>9</sup> See Dayal (2004) for discussion of postnominal adverbial modifiers and demonstratives.

ically null complement of *IX* can be interpreted as any type of individual (place included), we expect ambiguity. The prediction is borne out in (46).

- (46) HEAR-SAY  $\overline{\text{a-IX RESTAURANT a-IX}}^t$  REALLY GOOD.  $\overline{\text{FOOD ITALY. 1-IX NEVER TASTE. WANT EAT a-IX.}}$

‘I heard that that restaurant over there is really good. The food is Italian. I have never tasted it before. I want to eat {that/there}.’

The formalism remains to be worked out, but the path to capturing the various uses of *IX* has now been cleared.

## 5 Loose ends

We have thus far challenged two views regarding *IX* – showing that *IX* behaves as neither a definite article nor a pronoun. We have also argued that it is best approached as a demonstrative. This of course presents its own challenges: we now turn to the question whether the different types of demonstrative expressions (with and without an overt NP) can be unified.

Some researchers have argued that ‘bare’/‘simplex’ demonstrative differ from ‘complex’ ones minimally: in the ‘bare’ cases, the NP is simply elided (King 2001, Elbourne 2008, i.a.). An account of this sort would have difficulty explaining why unlike the complex demonstratives, bare demonstratives seem to resist bound variable interpretation:

- (47) a. Every time [a baby slaps [her hand]<sub>i</sub>]<sub>j</sub>, [*that* hand]<sub>i/\*j</sub> hurts, and the baby cries.  
 b. Every time [a baby slaps [her hand]<sub>i</sub>]<sub>j</sub>, [*that* \_\_\_\_]<sub>j/\*i</sub> hurts, and the baby cries.

In (47a), the complex demonstrative refers to the child’s hand; in (47b), the simplex version thereof refers to the event involving hand-slapping and – crucially – not the hand itself. On the view that *that* in (47b) is [*that* NP], and ellipsis is either the usual matter of identity (as in King 2001) or an abstract noun *ONE* (as in Elbourne 2005), it is unclear where the interpretation in (47b) comes from. To elaborate: the NP-ellipsis account predicts several possibilities for the interpretation of the elliptical structure: that *that* refers either to the child or the hand that has been slapped (both of which are NPs in the discourse). Yet, neither of these readings is available: the only reading of *that* in (47b) is the event of self-

hand-slapping administered by a child. Incidentally, if *that* in (47b) were to be substituted by *it*, the set of available readings would include both the hand and the event of hand-slapping.<sup>10</sup> King (2001) suggests that the deleted NP node might not host any lexical material at all and, rather, contributes the property of 'being a thing' (King 2001: 141–143). However, even with this amendment, it remains unclear why the reference to the event is possible here, and no other reference is available. Similarly, Elbourne (2005) argues that the argument of *that* in the bare demonstrative cases is a phonologically null noun ONE – an individual of type ⟨e⟩. On this view as well, reference to the baby or to the child in (47b) is not excluded. But we set this issue aside for now, unable to offer any evidence from ASL to help solve the problem – as we had noted earlier, without previous introduction of a locus, *IX* resists binding: when it is uttered, with or without an NP, it has a strong referential flavor and, thus, the asymmetry between a complex and a simplex demonstrative is bleached out.

Similarly, if the complement of the *IX* is something like Elbourne's ONE (or King's 'thing') – which, for our purposes we informally label *INDIVIDUAL* – it is somewhat unclear why it appears not to be possible for either *that* or *IX* to be bound by a negative quantifier.

- (48) a. There is no kid that thinks that [\*this/that *INDIVIDUAL*] is stupid  
 b. HERE NOT-HAVE KID THINK [\*neu-*IX* *INDIVIDUAL*] STUPID

Schlenker (2011) argues that sign language pronouns are special, since their denotation must be non-empty. However, in light of the data offered here, we no longer need to appeal to such a difference between signed and spoken languages. Instead, we might simply claim that what goes wrong in (48b) is exactly what goes wrong in (48a) as well as (47b) – while the reasons for this remain to be explored, the resistance of the simplex demonstrative to being bound by a (negative) quantifier is not a novel observation.

Another question concerns the NP ellipsis itself. As has been argued elsewhere (Koulidobrova 2012), NP ellipsis as in (49a) is productive in ASL. However, it is unable to strand a quantifier in the manner we see in English, as shown in (49b).

<sup>10</sup> Note also that in a few dialects of English in which *it* is generally used to refer to a baby (Received Pronunciation, e.g.), the pronoun in (47) can also refer to the baby. This suggests that some feature-matching/-agreement is involved – in the original (47) 'it' is able to refer to the hand (ineligible for a feminine or a masculine pronoun in English). Here we might assume a presuppositional approach to such feature matching (Schlenker 2003); however, what is unclear now is what to do with the reference to the event. At any rate, the point here is that the options afforded by the personal pronoun are different from those available with the demonstrative.

- (49) a. BOB BUILD FEW HOUSE FAST, PAUL DESTROY <sup>ok</sup>HOUSE  
 ‘Bob built a few houses fast; Paul destroyed (a few of {Bob’s/Paul’s} houses)’  
 b. MARY FINISH {2-POSS/MANY} BOOK. JOE SHOULD READ 1-POSS/FEW \*BOOK  
 ‘Mary finished {your book/many books}. Joe should read {my/a few (books)}’

One thing to note here: if *a-IX* is a demonstrative, and demonstratives are quantifiers, then we might expect the paradigm in (49) to replicate with *IX*. And in fact it turns out that *IX* here behaves on par with the quantifiers: as *POSS* and *FEW* cannot be left behind, neither can *IX*, even with a demonstration and contrast – conditions normally licensing a demonstrative.

- (50) MARY FINISH *a-c-IX* BOOK. JOE SHOULD READ *d-f-IX* \*BOOK  
 ‘Mary finished these books. Joe should read those (books)’

The question now, of course, is how to analyze *IX* when it occurs alone: if [*IX* \_\_\_\_] is a case of NP ellipsis which ‘strands’ the demonstrative, then why is it that in regular NP ellipsis cases such stranding is disallowed?

One option here is to bite the bullet and admit that the ellipsis of the NP argument of the demonstrative, thereby yielding a simplex demonstrative, is of a different variety than the other NP-ellipsis attested in a number of languages. This path may explain why, for instance, (48a) improves only if the original NP – and not our *INDIVIDUAL* – is restated.

- (51) There is no **kid** here that thinks that [that **kid**] is stupid

This, however, will be a difficult path to take. For one, we have shown elsewhere that nouns in ASL appear to be able to type-shift between kinds and individuals (as in Chierchia 1998; see discussion in Koulidobrova 2012); this predicts the ellipsis of the sort discussed in Elbourne – one that results in a phonologically null element of type ⟨e⟩ or ⟨e,t⟩ – to be just the type of ellipsis that we observe in (49) and (50). The other option to pursue is that the argument of the demonstrative is not phonologically null but, rather, unsaturated. If this is the case, then we expect cases of simplex demonstratives to be allowed while NP ellipsis stranding the complex demonstrative is impossible. This is precisely what the data demonstrate: in ‘regular’ use of *IX*, the element is licit irrespective of the overt presence of a supporting NP; in clear ellipsis configurations involving stranding of *IX*, it is disallowed.

## 6 Conclusion

Let us now take stock. Echoing the suggestions in McBurney (2002), who notes that “the class of signs traditionally referred to as personal pronouns may, in fact, be demonstratives” (McBurney 2002: 365), we have offered explicit evidence against the accounts of *IX* in ASL that analyze it as both a personal pronoun and a definite determiner, and have shown that the lexical item under examination is best viewed as a demonstrative. We have steered clear from engaging in the debate in the literature regarding the semantics of demonstratives; instead, we have focused on the empirical observations, having adopted an account of the facts that most clearly illustrates our point. A number of interesting conclusions have surfaced during our examination of *IX*. One is that on any account which equates a personal pronoun with an article, *IX* cannot be a personal pronoun. This is simply because *IX* cannot serve as a definite article. In fact, in all the cases requiring a definite article and not a demonstrative, *IX* is illicit (and no other lexical item will do) – driving us to the conclusion that ASL is a language without an overt definite article. Elsewhere (Koulidobrova 2012) we show that this is a plausible observation: on a number of unrelated diagnostics, ASL behaves on par with languages without overt definite articles.

Of course, simply because the language does not have an overt morpheme for the definite article does not mean that it should have no overt personal pronoun – the claim in the literature equating the two is being made about the semantics of the lexical items, not necessarily their overt realization. Therefore, independent evidence was required to defend our point of view. In our examination of the ‘pronominal’ use of *IX* we discovered that it appears to parallel with German D-pronouns – the ones that tend to pick out the types of referents other demonstrative expressions do.<sup>11</sup> Furthermore, if our view of *IX* is on the right track, the data we presented challenge the approach to the covert nominal argument of demonstratives as a case of NP ellipsis. More examination is in order here.

Admittedly, much remains to be worked out, and many issues remain undiscussed. For instance, we have not provided any explanation for why exactly previous introduction of loci changes the paradigm. The question also arises whether the analysis advocated here could incorporate other claims in the literature regarding pointing and pronominals in ASL. We have also avoided discussing

---

<sup>11</sup> We make this claim cautiously. Schwarz (2009), for example, suggests that the analysis of the German articles as may be extended to that of the two types of pronouns – the demonstrative pronoun analyzable along the lines of the *strong* definite article. However, we have demonstrated, this view will not do for the ASL *IX*.

whether any relationship should be established between the third person *IX* (our *a-IX*) and its 1<sup>st</sup>- and (possibly) 2<sup>nd</sup>-person counterparts (*IIX* and *2IX* respectively). This question is not trivial: previous research has argued that there is no grammatical 2<sup>nd</sup> person form (i.e., the relevant grammatical distinction is first vs. non-first; Meier 1990, Meier and Lillo-Martin 2013); and the 1<sup>st</sup> person form behaves logophorically in attitude reports (Lillo-Martin 1995, Schlenker 2014). Additionally, we would like to express caution against making our claim universal for sign languages. It is possible that cross-linguistic differences will be observed here, especially among languages unrelated to one another. Finally, the data reported here should be further compared with other languages (spoken and signed) from Table 3 – languages in which demonstratives exist but personal pronouns do not. More research is in order.

## References

- Abner, Natasha and Graff, Thomas. 2012. Binding complexity and the status of pronouns in English and American Sign Language. Presented at the *Formal and Experimental Approaches to the Sign Language Theory (FEAST) Colloquium*. Warsaw, April 2012.
- Ariel, Mira. 1990. *Accessing Noun-Phrase Antecedents*. Routledge.
- Barberà, Gemma and Martine Zwets. 2013. Pointing and reference in sign language and spoken Language: Anchoring vs. identifying. *Sign Language Studies*, 13: 4. 491–515
- Bhat, D.N.S. 2013. Third person pronouns and demonstratives. In Matthew S. Dryer & Martin Haspelmath (eds.) *The World Atlas of Language Structures Online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. (Available online at <http://wals.info/chapter/43>, Accessed on 2014-11-05.)
- Bosch, Peter. 2013. Anaphoric reference by demonstrative pronouns in German. Presented at the *Workshop on the Impact of Pronominal Form on Interpretation*, Universität Tübingen, Nov. 2013
- Bosch, Peter, Graham Katz, and Carla Umbach. 2007. The Non-subject Bias of German Demonstrative Pronouns. In M. Schwarz-Friesel, M. Consten & M. Knees (eds.) *Anaphors in Text: Cognitive, Formal and Applied Approaches to Anaphoric Reference*. 145–164
- Chierchia, Gennaro. 1998. Reference to kinds across languages. *Natural Language Semantics* 2: 339–405.
- Davidson, Kathryn. 2013. ‘And’ or ‘Or’: General Use Coordination in ASL. *Semantics & Pragmatics*, 6(4), 1–44.
- Davidson, Kathryn and Deanna Gagne. 2014. Vertical representation of quantificational domains. Presented at *Sinn und Bedeutung*, Basque Country, Spain, Sep 2013.
- Dayal, Veneeta. 2004. Number marking and (in)definiteness in kind terms. *Linguistics and Philosophy* 27 (3): 393–450.
- Elbourne, Paul. 2005. *Situations and Individuals*. Cambridge, Mass.: MIT Press.
- Elbourne, Paul. 2008. Demonstratives as individual concepts. *Linguistics and Philosophy*, 31(4): 409–466

- Frege, Gottlob. 1960 [1893]. On Sense and reference. Reprinted in P. Geach and M. Black, eds., *Translations from the Philosophical Writings of Gottlob Frege*. Oxford: Blackwell.
- Hankamer, Jorge and Ivan Sag. 1976. Deep and surface anaphora. *Linguistic Inquiry* 7: 391–428.
- Heim, Irene. 1982. *The Semantics of Definite and Indefinite Noun Phrases*. Doctoral dissertation, University of Massachusetts, Amherst.
- Heim, Irene. 1985. Direct reference explained away. Ms. University of Texas at Austin.
- Heim, Irene and Kratzer, Angelika. 1998. *Semantics in Generative Grammar*. Oxford: Blackwell.
- Hinterwimmer, Stefan. 2014. A unified account of the properties of German demonstrative pronouns. In P. Grosz, I. Heim, P. Patel & I. Yanovich (eds.), *Pronoun Workshop at NELS 40*, GLSA Publications, University of Massachusetts, Amherst.
- Johnson, Kyle. 2009. Ellipsis. Presented at Hogeschool-Universiteit, Brussels, April 2009
- Johnston, Trevor. 2013. Formational and functional characteristics of pointing signs in the corpus of Auslan (Australian Sign Language): Are the data sufficient to posit a grammatical class of 'pronouns' in Auslan? *Corpus Linguistics and Linguistic Theory* 9 (1): 109–159
- Kaplan, David. 1989a. Demonstratives. In J. Almog, J. Perry, and H. Wettstein, (eds.), *Themes from Kaplan*, 481–563. Oxford: Oxford University Press.
- King, Jeffrey. 2001. *Complex Demonstratives. A Quantificational Account*. Cambridge, MA: MIT Press.
- Kozintseva, Natalia A. 1995. Modern Eastern Armenian. *Languages of the World/Materials* 22. München: Lincom Europa.
- Koulidobrova, Elena. 2012. *When the Quiet Surfaces: 'Transfer' of Argument Omission in the Speech of ASL-English Bilinguals*. Doctoral dissertation. University of Connecticut.
- Koulidobrova, Elena. submitted. Elide me bare: Null arguments in American Sign Language.
- Kuhn, Jeremy. 2014. ASL loci: Variables or features? <http://semanticsarchive.net/Archive/jMzZGjhY/kuhn-ASL-loci.pdf>
- Liddell, Scott. (2003). *Grammar, Gesture, and Meaning in American Sign Language*. Cambridge: Cambridge University Press.
- Lillo-Martin, Diane and Deborah Chen Picher. 2008. Development of sign language acquisition corpora. In O. Crasborn, E. Efthimiou, T. Hanke, E. Thoutenhoofd, & I. Zwitserlood, (eds.), *Proceedings of the 3<sup>rd</sup> Workshop on the Representation and Processing of Sign Languages: Construction and Exploitation of Sign Language Corpora; 6<sup>th</sup> Language Resources and Evaluation Conference*, 129–133. [http://www.lrec-conf.org/proceedings/lrec2008/workshops/W25\\_Proceedings.pdf](http://www.lrec-conf.org/proceedings/lrec2008/workshops/W25_Proceedings.pdf)
- Lillo-Martin, Diane and Edward Klima. 1990. Pointing out difference: ASL pronouns in syntactic theory. In S. Fischer & P. Siple (eds.) *Theoretical Issues in Sign Language Research 1: Linguistics*, 191–210. Chicago: University of Chicago Press.
- Lillo-Martin, Diane and Richard Meier. 2011. On the linguistic status of 'agreement' in sign languages. *Theoretical Linguistics* 37 (3): 91–141.
- MacLaughlin, Dawn. 1997. *The structure of determiner phrases: Evidence from American Sign Language*. Doctoral dissertation, Boston University.
- McBurney, Susan Lloyd. 2002. Pronominal reference in sign and spoken language: are grammatical categories modality-dependent? In R. Meier, K. Cormier and D. Quinto-Pozos (eds.) *Modality and Structure in Sign and Spoken Languages*, 329–369. Cambridge: Cambridge University Press.

- Meier, Richard. 1990. Person deixis in American Sign Language. In S. Fischer & P. Siple (eds.) *Theoretical Issues in Sign Language Research 1: Linguistics*, 175–190. Chicago, IL: University of Chicago Press.
- Meier, Richard and Lillo-Martin, Diane. 2013. The points of language. *Humanamente: Journal of Philosophical Studies* 24, 151–176.
- Nouwen, Rick. 2003. *Plural Pronominal Anaphora in Context*. Doctoral dissertation. Utrecht Institute for Linguistics.
- Nowak, Ethan. 2013. Things a semantics for demonstratives should do. Ms. University of California, Berkeley.
- Postal, Paul. 1966. On so-called ‘pronouns’ in English. In F. Dinneen (ed.), *Report on the Seventeenth Annual Round Table Meeting on Linguistics and Language Studies*, 177–206. Washington, D.C.: Georgetown University Press.
- Recanati, Francois. 1993. *Direct Reference. From Language to Thought*. Oxford: Blackwell.
- Roberts, Craige. 2003. Uniqueness in definite Noun Phrases. *Linguistics and Philosophy* 26: 287–350.
- Reinhart, Tanya. 1981. Pragmatics and Linguistics: An Analysis of Sentence Topics. *Philosophica* 27: 53–93.
- Russell, Bertrand. 1905. On denoting. *Mind* 14: 479–493.
- Saito, Mamoru. 2007. Notes on East Asian argument ellipsis. *Language Research* 43(2): 203–227.
- Saltarelli, Mario, Azkarate, Miren, Farwell, David, de Urbina, Jon Ortiz and Lourdes Oñederra. 1988. Basque. *Croom Helm Descriptive Grammars*. London: Croom Helm.
- Sandler, Wendy and Diane Lillo-Martin. 2006. *Sign Language and Linguistic Universals*. Cambridge, UK: Cambridge University Press.
- Schlenker, Philippe. 2003. A plea for monsters. *Linguistics and Philosophy* 26(1), 29–120
- Schlenker, Philippe. 2009. Donkey anaphora in Sign Language II: The presuppositions of pronouns. In P. Grosz, I. Heim, P. Patel & I. Yanovich (eds.), *Pronoun Workshop at NELS 40*, GLSA Publications, University of Massachusetts, Amherst.
- Schlenker, Philippe. 2011. Quantifiers and variables: Insights from Sign Language (ASL and LSF). In B. Partee, M. Glanzberg and J. Skilters (eds.), *Formal Semantics and Pragmatics: Discourse, Context, and Models. The Baltic International Yearbook of Cognition, Logic and Communication* 6, 2011.
- Schlenker, Philippe, Lamberton, John & Santoro, Mirko. in press. Iconic Variables. *Linguistics & Philosophy*.
- Schlenker, Philippe. 2014. SuperMonsters I–II: Attitude and action role-shift in Sign Language. <http://ling.auf.net/lingbuzz/002069>
- Schwarz, Florian. 2009. *Two Types of Definites in Natural Language*. Doctoral dissertation. University of Massachusetts, Amherst.
- Selkirk, Elisabeth. (2005). Comments on intonational phrasing in English. In S. Frota, M.C. Vigário, & M.J. Freitas (eds.), *Prosodies*, 11–58. Walter de Gruyter
- Wiltschko, Martina. 1998. The syntax of pronouns and determiners. A cross-linguistic study. In M. Caldecott, S. Gessner, E.-S. Kim (eds.) *Current Research on Language and Linguistics: University of British Columbia Working Papers in Linguistics* 1: 293–320.
- Wolter, Lynsely. 2006. *That’s that: The Semantics and Pragmatics of Demonstrative Noun Phrases*. Doctoral dissertation. University of California, Santa Cruz.
- Wulf, Alyssa, Paul Dudis, Robert Bayley and Ceil Lucas. 2002. Variable subject presence in ASL narratives. *Sign Language Studies* 3: 154–7.