

Two indefinite pronouns in Catalan Sign Language (LSC)¹

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Abstract. This paper analyses two pronouns in Catalan Sign Language (LSC) that refer to unidentified human referents: WHO[^]SOME_{up} and ONE_{up}. We first show that in contexts that discriminate between indefinite pronouns and existential readings of human impersonal pronouns, both pronouns pattern with indefinite pronouns. We then examine the semantic properties of the two pronouns. WHO[^]SOME_{up} and ONE_{up} contrast with respect to their number, compatibility with collective predicates, scope with respect to event iteration and domain restriction requirements. In terms of specificity, both pronouns are epistemically non-specific, but ONE_{up} is interpreted as scopally and partitively specific while WHO[^]SOME_{up} is neutral with respect to scopal and partitive specificity.

Keywords: Catalan Sign Language (LSC), semantics, indefinite pronouns, specificity distinctions

1. Introduction

This paper examines two expressions that refer to unidentified human referents in Catalan Sign Language (LSC, *llengua de signes catalana*): the pronouns WHO[^]SOME_{up} and ONE_{up}.²

- (1) **ONE_{up}** HOUSE ENTER STEAL.
'Someone broke into the house.'
- (2) **WHO[^]SOME_{up}** GO INDIA VACCINATE MUST.
'When one goes to India one must get vaccinated/
When someone goes to India he must get vaccinated.'

The goals of this paper are two-fold. First, we will show that these expressions correspond to indefinite pronouns comparable to (3), rather than existential uses of impersonal pronouns as exemplified by German *man* or French *on* in (4).

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²This article follows the usual glossing conventions in the sign language literature. Manual signs are represented by the capitalized word corresponding to the translation of the sign. The abbreviations used in the glosses are the following (# is a placeholder for the loci in signing space corresponding to 1st, 2nd and 3rd person referents): IX# (index pointing sign); #-VERB-# (verb agreeing with subject and object). Sub-indices mark localizations in signing space: *lo* (low), *up* (up); lower indexed letters (*a*, *b*) mark lateral loci and coreference relations. Reduplication of signs is indicated by +++.

- (3) **Someone** stole my bike.
- (4) **On** a volé mon vélo. (Fr)
 Man hat mein Fahrrad gestohlen. (Ge)
 ON/MAN has (stolen) my bike (stolen)
 ‘They stole my bike.’

Secondly, we examine the profile of the two pronouns regarding epistemic, scopal and partitive specificity (see Farkas, 2002; von Heusinger, 2002). We will show that both pronouns are epistemically non-specific. WHO^SOME_{up} is neutral with respect to scopal and partitive specificity, while ONE_{up} is interpreted as scopally and partitively specific.

We proceed as follows. Section 2 provides some background on the referential use of space in sign languages in general and in LSC more specifically. In Section 3 we discuss the morphological composition of WHO^SOME_{up} and ONE_{up}. In Section 4 we examine the two pronouns in contexts that are characteristic for human impersonal pronouns and we show that both expressions pattern with indefinite pronouns, not with existential readings of impersonal pronouns. In Section 5 we present an array of semantic contrasts between the two pronouns. Section 6 concludes.

2. Background: The use of space in sign languages

In sign languages, space is used for grammatical purposes (see Perniss, 2012, for a detailed overview). In Western sign languages, signing space is considered to be constrained to the space in front of the signer’s torso. The signing space can be divided into the horizontal plane and the frontal plane. The horizontal plane is perpendicular to the body of the signer and is the default plane where the majority of signs are localized (Figure 1). The frontal plane runs parallel to the body of the signer from the waist up (Figure 2).



Figure 1: Sign localized on the horizontal plane



Figure 2: Sign localized high on the frontal plane

The figures above illustrate signs associated with a lateral area in the horizontal plane (Figure 1) and in the high part of the frontal plane (Figure 2). The spatial area associated with a Noun Phrase (NP) in sign language is called R-LOCUS (Klima and Bellugi, 1979). Canonically, NPs are associated with a locus on the horizontal plane of signing space, for example by a pointing index sign glossed IX3 (as in Figure 3) or by signing the lexical sign in the area of the locus (as in Figure 4 below).



Figure 3: Sign IX3_a pointing to R-locus *a*

In a sentence like (5) below, the two arguments are associated with two distinctive R-loci, indicated in the glosses by the subscripts *a* and *b* and shown in the pictures in Figure 4. The R-loci play a role for agreement and for anaphoric reference. As illustrated in Figure 5, the agreeing verb GIVE moves from the R-locus of the subject MARTÍ to the R-locus of the object JOANA. As shown by the continuation (6), R-loci may be used in coreferential contexts to refer to a previously introduced argument, for example by using a pronominal index sign IX3_a as in Figure 3.

- (5) MARTÍ_a IX3_a JOANA_b IX3_b BOOK 3_a-GIVE-3_b.
 ‘Martí gave Joana a book.’



Figure 4: Sign MARTÍ at R-locus *a*



Sign JOANA at R-locus *b*



Figure 5: Verb GIVE articulated from R-locus *a* to R-locus *b*

- (6) **IX3a BOOK INTEREST.**
 ‘He (Martí) found the book interesting.’

In example (5) the R-loci for the NPs are on the horizontal plane in front of the torso, as illustrated by Figure 4. It has been shown that the height of localization in the frontal plane is also relevant for the expression of reference. In American Sign Language (ASL) high R-loci trigger an indefinite interpretation (Bahan, 1996; MacLaughlin, 1997). In LSC, the frontal plane is used to express specificity distinctions (Barberà, 2012): NPs localized at a low R-locus are interpreted as epistemically specific (they are identifiable by the signer and belong to a restricted set), whereas NPs localized at a high R-locus are interpreted as epistemically non-specific (they are unidentifiable by the signer and do not belong to a restricted set).

The following examples provide a minimal pair for the interpretation of high vs. low R-locus for an NP in LSC.³ In (7a) the determiner *SOME* is localized at a low R-locus (indicated in the glosses with *lo*, Figure 6) and corresponds to a reading where the signer is talking about a specific group of students, which he can identify. In (7b), in contrast, the determiner *SOME* is localized at a high R-locus (indicated in the glosses with *up*, Figure 7) and a non-specific reading arises: the signer cannot identify the set of students.

- (7) a. STUDENT *SOME*_{lo} DEMONSTRATION GO. (LSC)
 ‘Some students (that I can identify) went to the demonstration.’
 b. STUDENT *SOME*_{up} DEMONSTRATION GO.
 ‘Some students (that I cannot identify) went to the demonstration.’



Figure 6: Sign *SOME* at a low R-locus



Figure 7: Sign *SOME* at a high R-locus

The two pronouns analysed in this paper are articulated in a high R-locus and trigger an epistemically non-specific interpretation, resembling the behaviour of NPs in this respect. However, in some contexts, pronominal elements in LSC articulated in high R-loci may have a scopally and partitively specific interpretation, unlike lexical NPs (see Section 5 below).

³In sign languages, signing space may be also used topographically. In topographical uses of space the spatial location of the sign provides information about the actual locations of entities, for example when referring to a book located on a high shelf (see Perniss, 2012, for discussion of different uses of signing space). In this article we leave the topographical use aside.

3. Morphological properties of the two pronouns

The pronoun $\text{WHO}^{\wedge}\text{SOME}_{\text{up}}$ is the concatenation of the sign for the interrogative pronoun **WHO** with the sign for the determiner **SOME**. The manual component of both uses of **WHO** is an arc-shaped movement of the wrist with the thumb pointing upwards, localized on the chin of the signer and with final contact.

The interrogative use of **WHO** (8) and the **WHO** forming part of the indefinite pronoun (9) differ in their non-manual components. While the interrogative particle co-occurs with furrowed eyebrows (Figure 8), the indefinite pronoun co-occurs with particular non-manuals that include sucking the cheeks in and pulling the mouth ends down, sometimes combined with a shrug (Figure 9).

(8) **COME WHO?**
'Who came?'

(9) **IX3 WHO[^]SOME_{up} SEE.**
'She saw someone.'



Figure 8: The sign for the interrogative **WHO**



Figure 9: Sign for the pronoun $\text{WHO}^{\wedge}\text{SOME}_{\text{up}}$

The indefinite pronoun ONE_{up} is signed in a high locus (see Figure 10) with the handshape of the numeral **ONE** (see Figure 11). The non-manuals for the indefinite pronoun ONE_{up} resemble those for the indefinite pronoun $\text{WHO}^{\wedge}\text{SOME}_{\text{up}}$ (Figure 9): they also consist in sucking the cheeks in and pulling the mouth ends down (Figure 10).

- (10) **ONE_{up}** HOUSE ENTER STEAL.
‘Someone broke into the house.’ (= (1))
- (11) **ONE** GIRL HOUSE ENTER.
‘A/one girl broke into the house.’



Figure 10: The pronoun ONE_{up} at a high locus, ex. (10)



Figure 11: The numeral ONE at a low locus, ex. (11)

Both pronouns are articulated in a high location of signing space (as indicated by the subscript *up* in the glosses), rather than in the default lower area. Both receive an epistemically non-specific interpretation, as is generally the case for elements associated with R-loci in the higher plane in LSC (see Barberà, 2012, and discussion of the example (7) above).

4. Indefinite or Impersonal Pronouns?

In LSC non-specific human pronouns are a common strategy to encode an unspecified human referent (Barberà and Quer, 2013). Reference to an unspecified human referent is also part of the semantic domain of dedicated human impersonal pronouns that allow existential readings such as German *man* or French *on*.

We have shown above that morphologically WHO^SOME_{up} looks like a wh-indefinite. The pronoun ONE_{up}, however, could potentially be an impersonal pronoun derived from the numeral *one*, as English *one* or Spanish *uno*.

To establish that WHO^SOME_{up} and ONE_{up} are indeed indefinite pronouns, we examined their behaviour in contexts that distinguish indefinites from existential uses of impersonal pronouns cross-linguistically (see Cabredo Hofherr, 2008, and references cited there). Indefinite pronouns (i) are incompatible with a generalizing reading in simplex sentences, (ii) are incompatible with corporate readings, (iii) trigger disjoint reference when the pronoun is repeated in anaphoric chains, and (iv) have narrow and wide scope interpretations with respect to adverbs like *twice*. Impersonal pronouns, in contrast, (i) are compatible with a generalizing reading, (ii) are compatible with corporate readings, (iii) typically allow joint and disjoint reference when the pronoun is repeated in anaphoric chains, and (iv) have a narrowest scope interpretation in their existential uses. We consider each of the four contexts in turn.

4.1. Generalizing vs. episodic readings

Episodic contexts are contexts in which an individual or an event is anchored to a particular spatio-temporal context (*Yesterday John had breakfast at 10am*). In contrast, in generalizing contexts either the individuals or the events are not anchored to a spatio-temporal context and express either recurring properties of an individual (*John has breakfast at 7am*) or general properties not tied to particular individuals (*Pandas are big/eat bamboo*).

The French pronoun *on* has generalizing and episodic readings. The generalizing reading of *on* is exemplified in (12a). This reading is comparable to the English *people* or to non-anaphoric *they*, as in the translation of (12a). As (12b) shows, indefinite pronouns like *someone* do not allow generalizing readings over people in general.

- (12) a. Au Mexique, **on** mange des grillons. (Fr)
 in Mexico ON eats indef.pl grasshoppers
 ‘In Mexico, they / people eat grasshoppers.’
 (generalizing over people associated with Mexico)
- b. In Mexico, **someone** eats/ate grasshoppers.
 (not generalizing over people associated with Mexico, ≠ (12a))

The two LSC pronouns typically appear in episodic contexts (13). When inserted in generalizing contexts, the pronouns are interpreted on a par with (12b): (14) is understood as a habitual reading for an unspecified individual, but not as a generalization over individuals in Lleida in general.

- (13) a. YESTERDAY **ONE**_{up} BIKE STEAL-3_{up}.
 b. YESTERDAY **WHO^SOME**_{up} BIKE STEAL-3_{up}.
 ‘Yesterday someone stole a/the bike.’
- (14) a. LLEIDA **ONE**_{up} SNAIL EAT.
 b. LLEIDA **WHO^SOME**_{up} SNAIL EAT.
 ‘In Lleida, there is someone who eats snails.’
 (not generalizing over people associated with Lleida)

In locative universal contexts as in (15) the null subject triggers a generic reading in LSC, meaning something paraphrasable with *people associated with location X in general*. When **WHO^SOME**_{up} is used in this context the episodic reading arises (16). The insertion of **ONE**_{up} in the context triggers either an episodic reading (17a) or a habitual reading of the predicate, with an existential interpretation of the individual (17b).

- (15) CHINA AREA EAT CAT. (null subject)
 ‘In China they eat cats.’
- (16) CHINA AREA **WHO^SOME**_{up} EAT CAT.
 ‘In China someone ate a cat/some cats.’

- (17) CHINA AREA **ONE**_{up} EAT CAT.
 a. 'In China someone ate a cat/cats.'
 b. 'In China, there is someone who eats cats.'

4.2. Corporate readings: predicates with designated subjects

Corporate readings arise with predicates that have a designated subject such as *deliver the mail*, *raise taxes* (Kärde, 1943; Pesetsky, 1995). In French, the corporate reading is compatible with an existential reading of the impersonal human pronoun *on*. The impersonal *on/they* in (18) is interpreted as referring to the people charged with raising taxes. Indefinite pronouns like *quelqu'un / someone*, in contrast, do not receive an interpretation corresponding to the group prototypically associated with the predicate in (19).

- (18) **On** a augmenté les impôts.
 'ON raised the taxes.' > 'They raised taxes.'
 (corporate reading: the people in charge of raising taxes)
- (19) **Quelqu'un** a augmenté les impôts.
 'Someone raised the taxes.'
 (no corporate reading: agent not part of the designated subject of the predicate).

In LSC, neither **WHO^SOME**_{up} nor **ONE**_{up} trigger the corporate interpretation in the parallel examples. Like (19), the examples in (20) are interpreted as saying that there was an unknown individual who raised the taxes but the examples do not imply that this individual belongs to a designated group of people in charge of raising taxes.

- (20) a. **WHO^SOME**_{up} RAISE TAXES.
 b. **ONE**_{up} RAISE TAXES.
 'Someone raised the taxes.' (~ (19))

4.3. Scope with respect to adverbials

Existential uses of impersonal pronouns, like French *on* and German *man*, have obligatory narrow scope with respect to frequency adverbs like *twice* or *always* (Zifonun, 2000 for German; Cabredo Hofherr, 2008 for French).

- (21) On a volé mon vélo deux fois. (Fr)
 ON has stolen my bike two times
 'ON stole my bike twice.' (2 times > someone)

Neither of the two LSC pronouns takes obligatory narrow scope. **WHO^SOME**_{up} allows wide and narrow scope readings with respect to the adverb, with wide scope for the pronoun preferred in examples like (22a). **ONE**_{up} differs from **WHO^SOME**_{up} with respect to scope: the use of **ONE**_{up} only allows a wide scope reading (23).

- (22) WHO[^]SOME_{up} IX1 BIKE 1-STEAL-3_{up}++ TWO TIMES.
 ‘Someone stole my bike two times. / Two times, someone stole my bike.’
 a. someone > 2 times (preferred)
 b. 2 times > someone
- (23) ONE_{up} BICYCLE 1-STEAL-3_{up}++ TWO TIMES.
 ‘Someone stole my bicycle two times.’ (someone > 2 times)

However, the use of signing space introduces a complicating factor: The localization of the R-loci in signing space can disambiguate in favour of a reading with co-varying subjects for the different events. In LSC the establishment of two different R-loci for the subject explicitly marks distribution over the subject, resulting in a reading where the indefinite subject co-varies with the stealing event (narrow scope reading). In example (22), the iterated movement of the verb STEAL is twice to an unspecified R-locus, marked ++ in the gloss. In example (24) below, in contrast, the agreeing verb STEAL is inflected with two distinct lateral R-loci (R-locus *a* and R-locus *b*) and this yields an interpretation according to which on two occasions my bike was stolen, by two different individuals.

- (24) WHO[^]SOME_{up} IX1 POSS BIKE 1-STEAL-3_{up.a} 1-STEAL-3_{up.b} TWO TIMES.
 ‘They stole my bike two times.’ (2 times > someone)

The availability of this explicitly distributing inflection for the verb may contribute to the preference for example (22) to be interpreted as not distributed.

We further tested the effect of adverb placement on interpretation. In order to avoid explicit distribution over different R-loci, we used the adverb ALWAYS in these examples. With the pronoun ONE_{up}, the interpretation of the subject is a constant individual (~ specific indefinite) independently of the position of the adverb ALWAYS (see (25a)/(26a)/(27a)). For WHO[^]SOME_{up} the position of the adverb ALWAYS makes a difference to interpretation. With an initial or final position of ALWAYS, the pronoun WHO[^]SOME_{up} is interpreted as (potentially) co-varying with the iterated events (25b)/(26b). A reading as a constant individual is forced when ALWAYS appears between WHO[^]SOME_{up} and the verb as in (27b).

We analyse the contrast with respect to WHO[^]SOME_{up} as indicating that WHO[^]SOME_{up} is interpreted inside the VP by default and only takes wide scope if it is overtly separated from the VP by the adverb ALWAYS.

- (25) a. IX NEIGHBOURHOOD ONE_{up} BIKE STEAL-3_{up} ALWAYS.
 ‘In this neighbourhood there is someone who always steals bikes.’
 (constant agent of the stealing events)
 b. IX NEIGHBOURHOOD WHO[^]SOME_{up} BIKE STEAL-3_{up} ALWAYS.
 ‘In this neighbourhood they always steal bikes.’
 (agent of stealing events need not be identical, can co-vary with the events)

- (26) a. **ALWAYS IX NEIGHBOURHOOD ONE_{up} BIKE STEAL-3_{up}.**
 ‘In this neighbourhood there is someone who always steals bikes.’
 (constant agent of the stealing events)
- b. **ALWAYS IX NEIGHBOURHOOD WHO^SOME_{up} BIKE STEAL-3_{up}.**
 ‘In this neighbourhood they always steal bikes.’
 (agent of stealing events need not be identical, can co-vary with the events)
- (27) a. **IX NEIGHBOURHOOD ONE_{up} ALWAYS BIKE STEAL-3_{up}.**
- b. **IX NEIGHBOURHOOD WHO^SOME_{up} ALWAYS BIKE STEAL-3_{up}.**
 ‘In this neighbourhood there is someone who always steals bikes.’

The data show that neither WHO^SOME_{up} nor ONE_{up} has the scope behaviour with respect to adverbs observed for existential readings of impersonal pronouns. We will come back to this contrast in scope behaviour between the two pronouns in Section 5 below.

4.4. Anaphora

In coreferential chains, impersonal pronouns (such as English *man*, French *on*, German *man*) allow co-referent interpretation of repeated pronouns as in (28), while indefinite pronouns do not (29).

- (28) a. When **one_i** goes to hospital, **one_i** / he _{*i/k} always fears the worst.
- b. **One_i** goes to hospital, and **one_i** / he _{*i/k} worries.
- (29) a. When **someone_i** goes to hospital, **someone_{*i/j}** / he _{i/*k} always fears the worst.
- b. **Someone_i** goes to hospital, and **someone_{*i/k}** / he _{i/k} worries.

With respect to this diagnostic, the two LSC pronouns again pattern with indefinite pronouns: the repetition of ONE_{up} and WHO^SOME_{up} triggers disjoint interpretation in (30)/(31). In LSC the equivalent of *when*-clauses is marked by the sign MOMENT as in example (30). Without MOMENT, the example corresponds to a paratactic coordination of two main clauses.

- (30) **ONE_{up} MOMENT HOSPITAL GO, ONE_{up} ALWAYS THINK RESULT WORST.**
 ‘When one_k is admitted to the hospital, one_j always fears the worst results.’
 (= different people in hospital and worrying)
- (31) **WHO^SOME_{up} HOSPITAL GO, WHO^SOME_{up} ALWAYS THINK RESULT WORST.**
 ‘Someone_i is admitted to the hospital; and someone_k always fears the worst results.’
 (= different people in hospital and worrying)

4.5. Summary

The diagnostics examined here show that neither WHO[^]SOME_{up} nor ONE_{up} behave like episodic readings of impersonal human pronouns available for French *on* or German *man*.

Furthermore, there is evidence that WHO[^]SOME_{up} is not a relative pronoun introducing free relatives either. In LSC, relative clauses are marked with squinted eyes and, optionally, with the particle MATEIX (Mosella, 2012). The examples with WHO[^]SOME_{up} do not show either of these markings. The comparison of WHO[^]SOME_{up} with free relatives with a wh-pronoun as in (33) shows that the free relative is articulated with brow-raise with scope over the relative clause.

(32) WHO[^]SOME_{up} EXAM DONE LEAVE CAN.
‘When someone finishes the exam he can leave.’

(33) [EXAM DONE WHO]_{brow raise} LEAVE CAN.
‘Whoever has finished the exam may leave.’

We therefore conclude that both WHO[^]SOME_{up} and ONE_{up} are indefinite pronouns in LSC that pattern with pronouns like *someone* in English. As we have seen in Section 4.3 above, however, the two indefinite pronouns differ in their interpretation with respect to frequency adverbs. In the next section we examine the semantic contrasts between the two pronouns in more detail.

5. Contrasts between WHO[^]SOME_{up} and ONE_{up}

In what follows, we show that WHO[^]SOME_{up} and ONE_{up} differ with respect to a number of semantic properties: number specification, compatibility with collective predicates, co-variation of the referent with event pluralities and a requirement for domain restriction for the referent.

5.1. Plural vs. singular interpretation

WHO[^]SOME_{up} and ONE_{up} differ with respect to their number specification. When WHO[^]SOME_{up} is used, the subject need not be singular (34a). With ONE_{up} the subject has to be singular (34b).

- (34) a. CHINA AREA WHO[^]SOME_{up} EAT CAT.
In China someone/some people ate a cat/cats.’
(can be more than one person)
- b. CHINA AREA ONE_{up} EAT CAT.
‘In China there is someone who eats cats.’
(one person only)

The contrast between the pronouns with respect to number interpretation is further confirmed in contexts in which the plurality of the unknown agent is explicitly denied. In the context we

tested, an office has been broken into and after the event, the footprints belonging to a single person were found outside the office. The singular interpretation of ONE_{up} coincides with the information about the number of the unknown agent from the context, and our informant added a confirmation headnod corresponding to an expression like *as expected* to the example in (35). In contrast, as $\text{WHO}^{\wedge}\text{SOME}_{\text{up}}$ is interpreted as ‘more than one’ by default, a context in which the footprints belong to the same person cancels the implicature that there is more than one agent of the event, leading to an expression of surprise by the informant (*How weird!?*) in (36).

- (35) YESTERDAY HERE OFFICE **ONE**_{up} c-STEAL-3_{up}. AFTERWARDS CHECK
 FOOTPRINT UNIQUE SINGLE SAME IX3_{up} headnod
 ‘Yesterday someone broke into the office. We checked the footprints afterwards and they belong to the same person, as expected.’
- (36) YESTERDAY HERE OFFICE **WHO[^]SOME**_{up} c-STEAL-3_{up}. AFTERWARDS CHECK
 FOOTPRINT UNIQUE SINGLE SAME IX3_{up}. WEIRD.
 ‘Yesterday some people broke into the office. We checked the footprints afterwards and they belong to the same person. How weird!?’

5.2. Collective and distributive readings

The analysis proposed of between $\text{WHO}^{\wedge}\text{SOME}_{\text{up}}$ as preferentially plural and ONE_{up} as singular is further confirmed by the fact that $\text{WHO}^{\wedge}\text{SOME}_{\text{up}}$ is compatible with collective predicates (37), while ONE_{up} is not (38).

- (37) WAR CITY **WHO[^]SOME**_{up} SURROUND.
 ‘They surrounded the city during the war.’
- (38) *WAR CITY **ONE**_{up} SURROUND.

ONE_{up} has a plural distributive form, consisting of a reduplication of the pronoun, which is grammatical with collective and distributive predicates. When this reduplicated form of the pronoun is used, reduplication of the verb is also obligatory; otherwise the sentence is ungrammatical. The reduplicated verb further triggers a distributive reading of the object.

- (39) WAR CITY **ONE**_{up+++} SURROUND+++.
 ‘They each surrounded a different city during the war.’
- (40) NEIGHBOURHOOD **ONE**_{up+++} BIKE STEAL-3_{up+++}.
 ‘In this neighbourhood, there is a number of (unidentified) people that each stole a bike/bikes.’

However, an exception is found with body-anchored verbs (like EAT), that do not admit reduplication. Because of this phonological restriction, the verb is not reduplicated when combined

with the plural distributive form of ONE_{up} but the sentence is still grammatical and we get the distributive reading.

- (41) CAKE $\text{ONE}_{\text{up}+++}$ EAT.
 ‘Some people had a piece of cake each.’

5.3. Co-variation with the event

As we have already seen in Section 4.3 above, the two pronouns differ in their scoping properties with respect to adverbs. $\text{WHO}^{\wedge}\text{SOME}_{\text{up}}$ triggers undetermined reference of subject and allows subjects to co-vary with the events.

In contrast, ONE_{up} does not co-vary with respect to the events, yielding a scopally specific interpretation. The referent of $\text{WHO}^{\wedge}\text{SOME}_{\text{up}}$ can co-vary with quantification over the event (here with the adverb ALWAYS): a scenario with a plurality of stealing events with different subjects for each event is possible. In contrast, with the pronoun ONE_{up} there is not co-variation of the subject with respect to the events. Therefore the iterated thefts are perpetrated by the same unknown person.

- (42) a. BUILDING IX POSS OFFICE DANGER. ALWAYS $\text{WHO}^{\wedge}\text{SOME}_{\text{up}}$ STEAL-3_{up} MONEY
 ‘The building of my office is very dangerous. They always steal money.’
- b. BUILDING IX DANGER. IX1 POSS OFFICE ALWAYS ONE_{up} STEAL-3_{up} MONEY
 ‘The building (of my office) is very dangerous. There is someone who always steals money in/from my office.’

5.4. Domain restriction

A restricted domain is compatible with both pronouns. However, while ONE_{up} strongly favours a reading in which there is a salient set that the referent belongs to, such a set is not required with $\text{WHO}^{\wedge}\text{SOME}_{\text{up}}$.

In the examples (43a) and (44a) with $\text{WHO}^{\wedge}\text{SOME}_{\text{up}}$, the unidentified human referent can but need not belong to a contextually salient set. With ONE_{up} , however, the referent is interpreted as belonging to a particular set, as shown in examples (43b) and (44b).

- (43) a. BUILDING IX FIRE FIREMEN ARRIVED. $\text{WHO}^{\wedge}\text{SOME}_{\text{up}}$ CL:GO-UP-ROOF
 ‘The building was on fire and the firemen arrived. One (fireman or normal person) went up to the roof.’

- b. BUILDING IX FIRE FIREMEN ARRIVED. **ONE_{up}** CL:GO-UP-ROOF
 ‘The building was on fire and the firemen arrived. One (of the firemen) went up to the roof.’
- (44) a. LIBRARY WOMAN PERSON RETIRE. **WHO^SOME_{up}** SUBSTITUTE
 ‘The librarian is getting retired. Someone (from a non-restricted set) will substitute her.’
- b. LIBRARY WOMAN PERSON RETIRE. **ONE_{up}** SUBSTITUTE
 ‘The librarian is getting retired. One (of her team) will substitute her.’

Further evidence that **ONE_{up}** explicitly favours a reading with a salient set is provided by continuations with the sign DE (meaning ‘belong’). In this context a continuation with a typical group inferred is more felicitous (45a) than a continuation with unexpected information (45b).

- (45) **ONE_{up}** DEAN INFORM
 ‘Someone informed the dean.’
- a. **PERSON_{up}** DE FACULTY.
 ‘He is someone from the faculty.’
- b. # **PERSON_{up}** DE GYMNASIUM.
 ‘He is someone from the gym.’

5.5. Interpretation of object and telicity

We found some evidence that the two pronouns seemed to correlate with a difference in telicity. With a telic predicate like EAT, **WHO^SOME_{up}** triggers a specific interpretation of the object, an episodic context and the event is interpreted as punctual (perfective) (46a). With **ONE_{up}** as a subject, the interpretation of the object was non-specific, with either habitual interpretation (imperfective) or an episodic interpretation that did not have a salient individual as an object (46b).

- (46) a. **WHO^SOME_{up}** CAT EAT.
 ‘Someone ate a/the cat.’
 Informants added: IX SEE DISAPPEAR ‘I see it disappeared.’
 (the (relevant) cat is no longer there)
- b. **ONE_{up}** CAT EAT.
 ‘There is one who eats cats.’
 Informants intuition: a/the salient cat has not disappeared

In future work we will explore the hypothesis that the effect of the pronoun on the object is indirect. According to our working hypothesis, **WHO^SOME_{up}** is not interpreted as a topic, and the interpretation of the object as specific is triggered by the fact that it is interpreted as the most plausible topic. **ONE_{up}**, on the other hand, corresponds to a constant, if unidentified, individual and as such can be interpreted as a topic itself, favouring an interpretation in which the object is semantically incorporated comparable to *eat cats*.

5.6. Summary

Using the specificity distinctions discussed by Farkas (2002); von Stechow (2002), the properties discussed in this section can be summarized as follows.

Both WHO^SOME_{up} and ONE_{up} are epistemically non-specific: the referent of the pronoun is unknown to the signer and to the addressee.

The two pronouns differ with respect to their scopal properties: WHO^SOME_{up} is preferentially interpreted as having a narrow scope reading and co-varies with iterated events, while ONE_{up} is interpreted as having wide scope with respect to event iteration. ONE_{up} is scopally specific while WHO^SOME_{up} allows both wide and narrow scope interpretations.

Finally, the two pronouns differ with respect to partitivity. WHO^SOME_{up} can, but need not, be part of a salient group while ONE_{up} is interpreted as belonging to a contextually salient group: ONE_{up} is partitively specific while WHO^SOME_{up} is compatible with partitive or non-partitive interpretations.

The following table summarizes the contrasts between the two indefinite pronouns:

<i>Types of specificity</i>	WHO^SOME _{up}	ONE _{up}
Epistemic unknown to signer	+ (16)	+ (17)
Scopal wide scope with TWICE	+/-	+
wide scope (sentence final/initial ALWAYS)	- (25a) & (26a)	+ (25b) & (26b)
wide scope (pre-verbal ALWAYS)	+ (27a)	+ (27b)
scope over event plurality (co-variation with events)	+ (42a)	- (42b)
Partitive interpreted as part of a salient group	-	+ (45)
<i>Other properties</i>		
Cardinality	1 or more (34a)	singular (34b)
Telicity punctual event vs. habitual	+ (46a) punctual	- (46b) habitual

6. Conclusions

We have shown that the expressions WHO^SOME_{up} and ONE_{up} pattern with indefinite pronouns like *someone*, not with existential readings of impersonal human pronouns like *on* in French. Both pronouns are epistemically non-specific since the referent of the pronoun has to be unknown to the speaker. Future work has to establish how WHO^SOME_{up} and ONE_{up} fit into the typology of epistemic indefinites discussed in the recent literature (Aloni and Port, 2011; Alonso-Ovalle and Menéndez-Benito, 2013).

The data presented further show that the two pronouns differ with respect to a range of semantic properties. First, while WHO^SOME_{up} is number neutral, ONE_{up} is interpreted as referring to a singular referent. For reference to a multiplicity, the sign ONE_{up} needs to be reduplicated yielding a form ONE_{up}+++ that forces a distributive reading. Secondly, WHO^SOME_{up} is preferentially interpreted as having a narrow scope reading with respect to unbounded event iteration, i.e. a reading in which the agent co-varies with the event, while ONE_{up} is interpreted as having wide scope. We found that WHO^SOME_{up} only gets a wide scope reading if it is overtly separated from the VP by the adverb ALWAYS. With respect to a bounded adverb like TWICE, WHO^SOME_{up} takes wide scope. Finally, WHO^SOME_{up} need not have a partitive interpretation, while ONE_{up} has a partitive interpretation as belonging to a salient set. These observations suggest that ONE_{up} is a strong indefinite, whereas WHO^SOME_{up} is a weak indefinite.

In future work we will explore the hypothesis that WHO^SOME_{up} and ONE_{up} contrast with respect to their information structure status. Unless it is moved out of the VP, WHO^SOME_{up} does not function as a topic making it similar to the implicit agent of passives: a sentence containing it will be interpreted asthetic unless an alternative topic is available. We will explore the hypothesis that ONE_{up} on the other hand is scopally specific and interpreted as part of a group that is contextually salient. If this hypothesis is correct, the contrast between the two pronouns would resemble the contrast in English between the following two examples:

- (47) a. They repaired the lift.
b. There is someone who repaired the lift.

Finally, the data discussed here show that in LSC the role of high loci in signing space is different for pronouns and for lexical NPs, suggesting that the structured use of signing space can be modulated depending on the grammatical category of the NP. Lexical NPs associated with a high locus are associated with an epistemically and partitively non-specific interpretation. In contrast, the pronoun ONE_{up} is partitively specific despite the fact that it is associated with a high locus.

References

- Aloni, M. and A. Port (2011). Epistemic indefinites cross-linguistically. In *Proceedings of NELS 41*.
Alonso-Ovalle, L. and P. Menéndez-Benito (2013). Epistemic indefinites: Are we ignorant

- about ignorance? In *Proceedings of the 19th Amsterdam Colloquium*.
- Bahan, B. (1996). *Non-manual Realization of Agreement in American Sign Language*. Ph. D. thesis, Boston University.
- Barberà, G. (2012). *The Meaning of Space in Catalan Sign Language (LSC). Reference, Specificity and Structure in Signed Discourse*. Ph. D. thesis, Universitat Pompeu Fabra.
- Barberà, G. and J. Quer (2013). Impersonal reference in Catalan Sign Language (LSC). In L. Meurant, A. Sinte, M. van Herreweghe, and M. Vermeerbergen (Eds.), *Sign Language Research Uses and Practices: Crossing Views on Theoretical and Applied Sign Language Linguistics*, pp. 237–258. Berlin–Boston: De Gruyter Mouton and Ishara Press.
- Cabredo Hofherr, P. (2008). Les pronoms impersonnels humains — syntaxe et interprétation. *Modèles linguistiques XXIX-1(57)*, 35–56.
- Farkas, D. F. (2002). Specificity distinctions. *Journal of Semantics* 19, 1–31.
- Kärde, S. (1943). *Quelques manières d'exprimer l'idée d'un sujet indéterminé ou général en espagnol*. Uppsala: Appelbergs Boktryckeriaktiebolag.
- Klima, E. and U. Bellugi (1979). *The Signs of Language*. Cambridge, MA: Harvard University Press.
- MacLaughlin, D. (1997). *The Structure of Determiner Phrases: Evidence from American Sign Language*. Ph. D. thesis, Boston University.
- Mosella, M. (2012). *Les construccions relatives en llengua de signes catalana (LSC)*. Ph. D. thesis, Universitat de Barcelona.
- Perniss, P. (2012). Use of sign space. In R. Pfau, M. Steinbach, and B. Woll (Eds.), *Sign Language: An International Handbook (HSK — Handbooks of Linguistics and Communication Sciences)*, pp. 412–431. Berlin–Boston: De Gruyter Mouton.
- Pesetsky, D. (1995). *Zero Syntax*. Cambridge, MA: MIT Press.
- von Heusinger, K. (2002). Specificity and definiteness in sentence and discourse structure. *Journal of Semantics* 19, 245–274.
- Zifonun, G. (2000). “Man lebt nur einmal”. Morphosyntax und Semantik des Pronomens *man*. *Deutsche Sprache* 28, 232–253.