Two indefinite pronouns in Catalan Sign Language (LSC)\textsuperscript{1}
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Abstract. This paper analyses two pronouns in Catalan Sign Language (LSC) that refer to unidentified human referents: WHO\textsuperscript{•}SOME\textsubscript{up} and ONE\textsubscript{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\textsuperscript{•}SOME\textsubscript{up} and ONE\textsubscript{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\textsubscript{up} is interpreted as scopally and partitively specific while WHO\textsuperscript{•}SOME\textsubscript{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\textsuperscript{•}SOME\textsubscript{up} and ONE\textsubscript{up}.\textsuperscript{2}

(1) ONE\textsubscript{up} HOUSE ENTER STEAL.
   ‘Someone broke into the house.’

(2) WHO\textsuperscript{•}SOME\textsubscript{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).

\textsuperscript{1}The research reported in this paper is part of the Franco-German ANR-DFG project Towards a typology of human impersonal pronouns (ANR-11-FRAL-0011, 2012–15). The work of G. Barberà was partly supported by the project GramRefLSC, Ministerio de Economía y Competitividad, FFI2015-68594-P. For their useful comments and interesting discussions on previous versions of this work, we would like to thank the audiences at the Workshop on the Semantic Contribution of Det and Num (UAB, May 2016), Formal and Experimental Advances in Sign Language Theory (FEAST) (Venice, September 2016), Sinn und Bedeutung 21 (Edinburgh, September 2016), and New Ideas in Semantics and Modelling (Paris, September 2016). We are grateful to Delfina Aliaga and Santiago Frigola for the elicitation sessions and for the discussions on LSC. Thank you to Rob Truswell and the editors for their careful comments and suggestions on this paper. All remaining mistakes are our responsibility.

\textsuperscript{2}This 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](image)

![Figure 2: Sign localized high on the frontal plane](image)
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 pointing to R-locus a](image)

In a sentence like (5) below, the two arguments are associated with two distinctive R-loci, indicated in the glosses by the subscripts \textit{a} and \textit{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 as in Figure 3.

\[(5) \text{MARTÍ}a \text{IX3}a \text{JOANA}b \text{IX3}b \text{BOOK} \text{3a-GIVE-3b.} \]

‘Martí gave Joana a book.’

![Figure 4: Sign MARTÍ at R-locus a and Sign JOANA at R-locus b](image)

![Figure 5: Verb GIVE articulated from R-locus a to R-locus b](image)
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. In (7a) the determiner SOME is localized at a low R-locus (indicated in the glosses with \textit{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 \textit{up}, Figure 7) and a non-specific reading arises: the signer cannot identify the set of students.

\begin{enumerate}[a.]
\item STUDENT SOME\textsubscript{lo} DEMONSTRATION GO. \hfill (LSC)
\end{enumerate}

\begin{quote}
{‘Some students (that I can identify) went to the demonstration.’}
\end{quote}

\begin{enumerate}[a.]
\item STUDENT SOME\textsubscript{up} DEMONSTRATION GO.
\end{enumerate}

\begin{quote}
{‘Some students (that I cannot identify) went to the demonstration.’}
\end{quote}

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).

\footnote{In 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 WHO’SOME_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.’

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 WHO’SOME_up (Figure 9): they also consist in sucking the cheeks in and pulling the mouth ends down (Figure 10).

Figure 8: The sign for the interrogative WHO

Figure 9: Sign for the pronoun WHO’SOME_up
(10) \( \text{ONE}_{\text{up}} \) HOUSE ENTER STEAL.
    ‘Someone broke into the house.’ (= (1))

(11) \( \text{ONE} \) GIRL HOUSE ENTER.
    ‘A/one girl broke into the house.’

Figure 10: The pronoun \( \text{ONE}_{\text{up}} \) at a high locus, ex. (10)
Figure 11: The numeral \( \text{ONE} \) at a low locus, ex. (11)

Both pronouns are articulated in a high location of signing space (as indicated by the subscript \( \text{up} \) 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 \( \text{man} \) or French \( \text{on} \).

We have shown above that morphologically \( \text{WHO'SOME}_{\text{up}} \) looks like a wh-indefinite. The pronoun \( \text{ONE}_{\text{up}} \), however, could potentially be an impersonal pronoun derived from the numeral \( \text{one} \), as English \( \text{one} \) or Spanish \( \text{uno} \).

To establish that \( \text{WHO'SOME}_{\text{up}} \) and \( \text{ONE}_{\text{up}} \) 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 \( \text{twice} \). 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.’
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.
    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).
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)  

<table>
<thead>
<tr>
<th></th>
<th>ALWAYS IX NEIGHBOURHOOD ONE_{up} BIKE STEAL-3_{up}.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>‘In this neighbourhood there is someone who always steals bikes.’</td>
</tr>
<tr>
<td></td>
<td>(constant agent of the stealing events)</td>
</tr>
<tr>
<td>b</td>
<td>ALWAYS IX NEIGHBOURHOOD WHO’SOME_{up} BIKE STEAL-3_{up}.</td>
</tr>
<tr>
<td></td>
<td>‘In this neighbourhood they always steal bikes.’</td>
</tr>
<tr>
<td></td>
<td>(agent of stealing events need not be identical, can co-vary with the events)</td>
</tr>
</tbody>
</table>

(27)  

<table>
<thead>
<tr>
<th></th>
<th>IX NEIGHBOURHOOD ONE_{up} ALWAYS BIKE STEAL-3_{up}.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>‘In this neighbourhood there is someone who always steals bikes.’</td>
</tr>
<tr>
<td>b</td>
<td>IX NEIGHBOURHOOD WHO’SOME_{up} ALWAYS BIKE STEAL-3_{up}.</td>
</tr>
</tbody>
</table>

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)  

<table>
<thead>
<tr>
<th></th>
<th>When one_i goes to hospital, one_i / he_i_k always fears the worst.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>One_i goes to hospital, and one_i / he_i_k worries.</td>
</tr>
</tbody>
</table>

(29)  

<table>
<thead>
<tr>
<th></th>
<th>When someone_i goes to hospital, someone_i / he_i_k always fears the worst.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Someone_i goes to hospital, and someone_i / he_i_k worries.</td>
</tr>
</tbody>
</table>

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)  

<table>
<thead>
<tr>
<th>ONE_up MOMENT HOSPITAL GO, ONE_up ALWAYS THINK RESULT WORST.</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘When one_k is admitted to the hospital, one_j always fears the worst results.’</td>
</tr>
<tr>
<td>(= different people in hospital and worrying)</td>
</tr>
</tbody>
</table>

(31)  

<table>
<thead>
<tr>
<th>WHO’SOME_up HOSPITAL GO, WHO’SOME_up ALWAYS THINK RESULT WORST.</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Someone_i is admitted to the hospital; and someone_k always fears the worst results.’</td>
</tr>
<tr>
<td>(= different people in hospital and worrying)</td>
</tr>
</tbody>
</table>
4.5. Summary

The diagnostics examined here show that neither WHOˆSOME\textsubscript{up} nor ONE\textsubscript{up} behave like episodic readings of impersonal human pronouns available for French \textit{on} or German \textit{man}.

Furthermore, there is evidence that WHOˆSOME\textsubscript{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 \textit{WHOˆSOME\textsubscript{up}} do not show either of these markings. The comparison of \textit{WHOˆSOME\textsubscript{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.

\begin{equation}
\text{(32) WHOˆSOME\textsubscript{up} EXAM DONE LEAVE CAN.}
\end{equation}

‘When someone finishes the exam he can leave.’

\begin{equation}
\text{(33) \textit{[EXAM DONE WHO]}\textsubscript{brow \textit{raise} LEAVE CAN.}
\end{equation}

‘Whoever has finished the exam may leave.’

We therefore conclude that both \textit{WHOˆSOME\textsubscript{up}} and \textit{ONE\textsubscript{up}} are indefinite pronouns in LSC that pattern with pronouns like \textit{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 WHOˆSOME\textsubscript{up} and ONE\textsubscript{up}

In what follows, we show that \textit{WHOˆSOME\textsubscript{up}} and \textit{ONE\textsubscript{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

\textit{WHOˆSOME\textsubscript{up}} and \textit{ONE\textsubscript{up}} differ with respect to their number specification. When \textit{WHOˆSOME\textsubscript{up}} is used, the subject need not be singular (34a). With \textit{ONE\textsubscript{up}} the subject has to be singular (34b).

\begin{equation}
\text{(34) a. CHINA AREA WHOˆSOME\textsubscript{up} EAT CAT.}
\end{equation}

‘In China someone/some people ate a cat/cats.’

\begin{equation}
\text{(34) b. CHINA AREA ONE\textsubscript{up} EAT CAT.}
\end{equation}

‘In China there is someone who eats cats.’

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 WHO’SOME 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 WHO’SOME up as preferentially plural and ONE up as singu-
lar is further confirmed by the fact that WHO’SOME 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 ungram-
matical. 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 redu-
plication. Because of this phonological restriction, the verb is not reduplicated when combined
with the plural distributive form of ONE\textsubscript{up} but the sentence is still grammatical and we get the distributive reading.

\begin{align*}
\text{(41)} & \quad \text{CAKE ONE\textsubscript{up}+++ EAT.} \\
& \quad \text{‘Some people had a piece of cake each.’}
\end{align*}

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. WHO\textsuperscript{SOME}\textsubscript{up} triggers undetermined reference of subject and allows subjects to co-vary with the events.

In contrast, ONE\textsubscript{up} does not co-vary with respect to the events, yielding a scopally specific interpretation. The referent of WHO\textsuperscript{SOME}\textsubscript{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\textsubscript{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.

\begin{align*}
\text{(42)} & \quad \text{a. BUILDING IX POSS OFFICE DANGER. ALWAYS WHO\textsuperscript{SOME}\textsubscript{up} STEAL-3\textsubscript{up} MONEY} \\
& \quad \text{‘The building of my office is very dangerous. They always steal money.’} \\
& \quad \text{b. BUILDING IX DANGER. IX1 POSS OFFICE ALWAYS ONE\textsubscript{up} STEAL-3\textsubscript{up} MONEY} \\
& \quad \text{‘The building (of my office) is very dangerous. There is someone who always steals money in/from my office.’}
\end{align*}

5.4. Domain restriction

A restricted domain is compatible with both pronouns. However, while ONE\textsubscript{up} strongly favours a reading in which there is a salient set that the referent belongs to, such a set is not required with WHO\textsuperscript{SOME}\textsubscript{up}.

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

\begin{align*}
\text{(43)} & \quad \text{a. BUILDING IX FIRE FIREMEN ARRIVED. WHO\textsuperscript{SOME}\textsubscript{up} CL:GO-UP-ROOF} \\
& \quad \text{‘The building was on fire and the firemen arrived. One (fireman or normal person) went up to the roof.’}
\end{align*}
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 substi-
   tute 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 Heusinger (2002), the properties discussed in this section can be summarized as follows.

Both WHO\textsuperscript{SOME up} and ONE\textsubscript{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\textsuperscript{SOME up} is preferentially interpreted as having a narrow scope reading and co-varies with iterated events, while ONE\textsubscript{up} is interpreted as having wide scope with respect to event iteration. ONE\textsubscript{up} is scopally specific while WHO\textsuperscript{SOME up} allows both wide and narrow scope interpretations.

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

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

<table>
<thead>
<tr>
<th>Types of specificity</th>
<th>WHO\textsuperscript{SOME up}</th>
<th>ONE\textsubscript{up}</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Epistemic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>unknown to signer</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>(16)</td>
<td>(17)</td>
</tr>
<tr>
<td><strong>Scopal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>wide scope with TWICE</td>
<td>+/-</td>
<td>+</td>
</tr>
<tr>
<td>wide scope (sentence final/initial ALWAYS)</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>(25a) &amp; (26a)</td>
<td>(25b) &amp; (26b)</td>
</tr>
<tr>
<td>wide scope (pre-verbal ALWAYS)</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>(27a)</td>
<td>(27b)</td>
</tr>
<tr>
<td>scope over event plurality (co-variation with events)</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(42a)</td>
<td>(42b)</td>
</tr>
<tr>
<td><strong>Partitive</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>interpreted as part of a salient group</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>(45)</td>
<td></td>
</tr>
<tr>
<td><strong>Other properties</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cardinality</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 or more</td>
<td></td>
<td>singular</td>
</tr>
<tr>
<td></td>
<td>(34a)</td>
<td>(34b)</td>
</tr>
<tr>
<td><strong>Telicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>punctual event vs. habitual</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(46a) punctual</td>
<td>(46b) habitual</td>
</tr>
</tbody>
</table>
6. Conclusions

We have shown that the expressions WHO’SOME\textsuperscript{up} and ONE\textsubscript{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\textsuperscript{up} and ONE\textsubscript{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\textsubscript{up} is number neutral, ONE\textsubscript{up} is interpreted as referring to a singular referent. For reference to a multiplicity, the sign ONE\textsubscript{up} needs to be reduplicated yielding a form ONE\textsubscript{up}+++ that forces a distributive reading. Secondly, WHO’SOME\textsubscript{up} is preferentially interpreted has 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\textsubscript{up} is interpreted as having wide scope. We found that WHO’SOME\textsubscript{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\textsubscript{up} takes wide scope. Finally, WHO’SOME\textsubscript{up} need not have a partitive interpretation, while ONE\textsubscript{up} has a partitive interpretation as belonging to a salient set. These observations suggest that ONE\textsubscript{up} is a strong indefinite, whereas WHO’SOME\textsubscript{up} is a weak indefinite.

In future work we will explore the hypothesis that WHO’SOME\textsubscript{up} and ONE\textsubscript{up} contrast with respect to their information structure status. Unless it is moved out of the VP, WHO’SOME\textsubscript{up} does not function as a topic making it similar to the implicit agent of passives: a sentence containing it will be interpreted as thetic unless an alternative topic is available. We will explore the hypothesis that ONE\textsubscript{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\textsubscript{up} is partitively specific despite the fact that it is associated with a high locus.

References

about ignorance? In *Proceedings of the 19th Amsterdam Colloquium*.


