Impersonal reference
in Russian Sign Language (RSL)

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This paper contains the first description of impersonal reference in Russian Sign Language (RSL). Impersonal reference has been investigated using a variety of elicitation techniques. It has been found that RSL uses a variety of strategies, namely pro-drop, an indefinite pronoun SOMEONE, a plural pronoun IX$_{pl}$, and probably a second-person pronoun IX$_2$ in impersonal contexts. The impersonal strategies in RSL follow the general typological tendencies previously identified for spoken languages (Gast & Van der Auwera 2013), and do not show obvious modality effects (such as described by Barberà & Quer 2013). Some impersonal strategies show evidence of influence of spoken/written Russian in the form of borrowing and/or code-switching.

Keywords: impersonal reference, Russian Sign Language, pro-drop
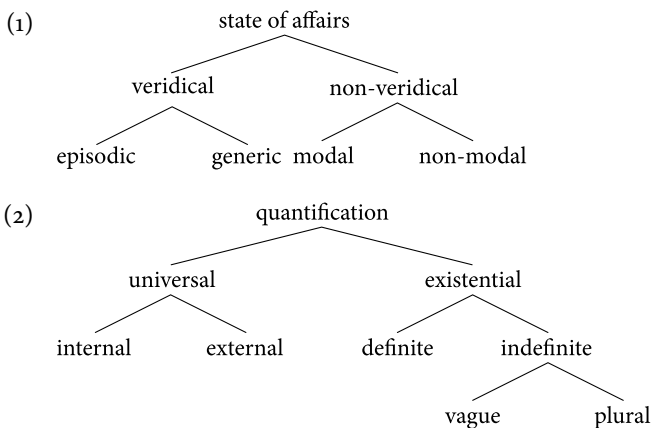
1.   Introduction

In this paper, I present the first description of impersonal reference in Russian Sign Language (RSL). Impersonal reference and the linguistic means of expressing it have recently received a lot of attention (Cabredo Hofherr 2006; Siewierska 2008, 2011; Gast & Van der Auwera 2013). In particular, linguists now have a good understanding of the inventory of impersonal pronouns and other means of expressing impersonal reference in spoken languages. Typologically-based research also led to a deeper theoretical understanding of what impersonal reference is, semantically speaking. However, until very recently, the investigation of impersonal reference had been constrained to the spoken modality, that is, to spoken languages. The first description of impersonality in a signed language (Catalan Sign Language, LSC, Barberà & Quer 2013) has shown that the visual modality can provide additional means of expressing impersonal reference. For this reason,

in this paper, I extend the typological scope of studies on R-impersonals to Russian Sign Language (RSL).

The purpose of this study of impersonals in RSL is mainly descriptive: based on a questionnaire on impersonal reference in sign languages, I outline the (main) strategies used in impersonal contexts in RSL. However, it is also instructive to look at the RSL data in a typological context and also to keep in mind the possible role of modality. The typological context is provided by Gast & Van der Auwera's (2013) research on the distributional typology of impersonal pronouns, and the modality perspective is provided by Barberà & Quer (2013). I discuss these papers in Section 2. Section 3 is devoted to methodology, followed by Section 4 in which the main results are presented. In Section 5, I discuss the results in relation to theories introduced in Section 2, and Section 6 concludes the paper.

2.   Impersonal reference in spoken and sign languages

The definition of R-impersonals includes the ability to generalize over humans in syntactically simple contexts (see the Introduction of this special issue). Gast & Van der Auwera (2013) analyzed impersonal pronouns in several European (spoken) languages, and as a result provided a detailed semantic analysis of the field of impersonal reference. In particular, they argued that the contexts in which impersonal pronouns are used can be classified according to two major groups of parameters: properties of the state of affairs described by the sentence, and properties of the set of human participants (in particular, quantification). They provided a hierarchical classification of these parameters: (1) and (2).

(1)

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                    state of affairs
               /                      \
          veridical              non-veridical
         /        \              /            \
    episodic    generic     modal          non-modal
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(2)

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                    quantification
             /                          \
        universal                   existential
       /        \                  /            \
  internal    external        definite       indefinite
                                             /          \
                                          vague        plural
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According to Gast & van der Auwera, not all combinations of features are possible: they proposed a list of 7 contexts which can all be characterized with a particular

constellation of these features. Interestingly, these contexts form a semantic map, depicted in Figure 1. This semantic map is the representation of their finding that a particular pronoun (or another impersonal strategy) in a language can only cover an uninterrupted region of the map. Another prediction this map makes is diachronic: the pronouns are expected to change their functions following connected regions of the semantic map.
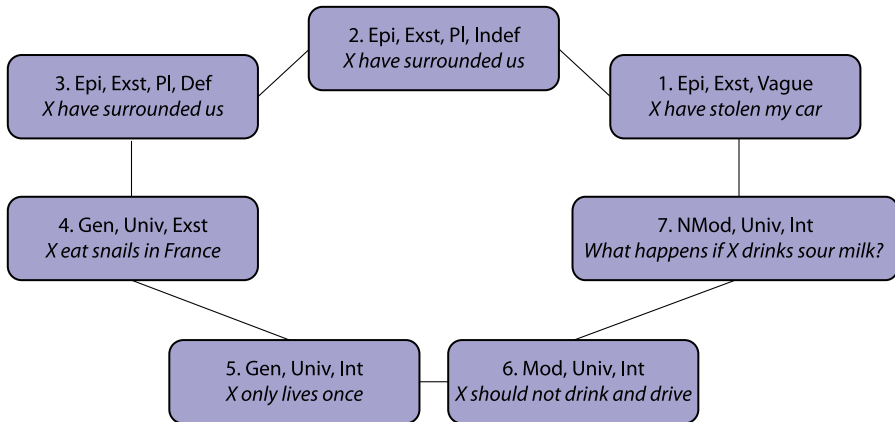

Figure 1. Semantic map of impersonal reference adapted from Gast & Van der Auwera (2013). The following abbreviations are used: Epi – episodic, Gen – generic, Mod – modal, NMod – non-modal, Exst – existential, Univ – universal, Indef – indefinite, Pl – plural, Int – internal. Each context is also illustrated with a representative sentence, where X stands for the impersonal argument.

For example, the German impersonal pronoun *man*, the Dutch impersonal pronoun *men*, and the French impersonal pronoun *on* can be used in all of these contexts. Other pronouns are more restricted, but still cover a connected region on the map. For instance, English *they* can be used in contexts 1–4; and the English second person singular pronoun *you* can be used in contexts 5–7. Indefinite pronouns, such as *someone* in English and *iemand* in Dutch, are not impersonal pronouns by definition (see the Introduction to this special issue), but they can also be used for argument backgrounding in some impersonal contexts, in particular, in contexts 7 and 1.

The fact that these contexts form a map is not a coincidence. Gast & Van der Auwera showed that neighboring nodes on the map usually differ along just one, and sometimes along two, of the semantic parameters in (1) and (2). The only exception is the connection between nodes 1 and 7 which differ according to basically all parameters, but this is accounted for by the quantificational variability effects: indefinites can get either existential or universal interpretation depend-

ing on the type of quantification over events, so a change in the type of the state of affairs leads to the change in the type of the quantificational interpretation of the argument. To sum up, the semantic map that Gast & Van der Auwera propose is both empirically and theoretically motivated. Therefore, one would expect that sign languages and RSL in particular would abide by this map in expressing impersonal reference.

One context that Gast & van der Auwera discussed but did not put on the map is verbs of saying. According to Siewierska & Papastathi (2011:604), verbs of saying clearly are a separate context in which impersonal pronouns can be used (3), because in some languages (Finnish and Estonian), the impersonal use of the third plural pronoun is limited to this context. Impersonal contexts with verbs of saying are particularly intriguing since they cannot be characterized neatly in terms of the features introduced in (1) and (2). It is therefore interesting to see whether verbs of saying in RSL (and other sign languages) use some special marking to express impersonal reference, and if so, to discuss how this can be incorporated into Gast & Van der Auwera's framework.

(3)   They say that he was a drinker.

Another important theoretical consideration is that sign languages may differ from spoken languages due to the visual modality, and this difference can also pertain to impersonality and reference in general. Barberà & Quer (2013) demonstrated that this is the case for Catalan Sign Language (LSC). In this language, impersonal reference makes use of high loci in the signing space, which has been previously shown to be associated with non-specific reference (Barberà 2012a). The third person plural pronoun, the indefinite pronoun WHO^IX$_{3.pl.up}$ 'someone' (4),[1] the sign ONE (5), and agreeing verbs (4) all use high loci in impersonal contexts (Barberà & Quer 2013).

(4)   **WHO^IX$_{3.pl.up}$** MONEY 3-STEAL-**3up**   [LSC]
      'Someone stole the money.'

(5)   **ONE$_{up}$** MOMENT HOSPITAL GO, ALWAYS THINK RESULT WORSE   [LSC]
      'When one is admitted to hospital, one always fears the worst result.'

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1. Glossing conventions: signs are glossed in small caps following common conventions. IX stands for index, ^ for compounds, PU for palms up, comma stands for a prosodic break, CL:HL(B) means a handling classifier with the B-handshape, RED – simple reduplication, 2H.ALT – two-handed alternating reduplication, PST – past tense marker, FUT – future marker, PERF – perfective marker, IMPER – imperfect, IMP – imperative. Non-manuals: br – eyebrows raised, bht – backward head tilt.

It is clear that sign languages may use space for linguistic purposes. Some indications of the use of space for different types of reference have also been reported for other sign languages (see Davidson & Gagne (2014) for American Sign Language), so it is necessary to check this possible modality effect for RSL.

3.   Methodology

RSL is a language used by at least 120,000 people in the Russian Federation.[2] Until recently, there has been very little linguistic research conducted on RSL. However, in recent years, many aspects of RSL grammar have been investigated (see Kimmelman (2014) for an overview). No specific research on impersonal reference has been conducted so far. Importantly, an on-line corpus of RSL has been launched in 2014 (Burkova 2015), which can be used to further investigate the properties of this language.

One crucial property of RSL that needs to be considered is that it is in constant contact with Russian. Most RSL signers are bilingual and use (at least written) Russian in daily life. In addition, an artificial manual communication system, Signed Russian, exists, which uses RSL signs but generally follows the rules of Russian grammar. Signed Russian is actively employed by interpreters and in deaf education. All of this can result in borrowing from Russian to RSL, but also in code-switching or code-mixing between RSL and Signed Russian. As I discuss below, this has methodological and theoretical consequences.

In this study, three types of data are used: informal elicitation, a felicity judgment experiment, and corpus research. These methods complement each other, as all of them have advantages and disadvantages.

The first and main source of the data is elicitation based on a questionnaire on impersonal reference (see the Introduction). The questionnaire contains a variety of impersonal contexts, including all the contexts identified by Gast & van der Auwera (2013) represented in Figure 1, but also some additional contexts, such as verbs of speech. I modified the presentation of the target sentences slightly: instead of providing signers with a full well-formed sentence in Russian, the target sentence was represented with glosses in written Russian in basic forms (infinitives for verbs, nominal case for nouns and adjectives), as in (6). This way, I hoped to avoid biasing the signers in favor of a strategy attested in Russian.[3]

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2. The number is according to the official census organized in 2010: see http://www.rg.ru/2011/12/16/stat.html.

3. The resulting representation in glosses was ungrammatical in Russian; infinitive forms in general are not used to express impersonal reference in this language.

(6)   Context: you get out of the house to cycle to work. But your bike is no longer there. You say to your neighbor:
STEAL BIKE

I conducted elicitation with four native signers of the Moscow variety of RSL.[4] The procedure differed for different signers. With two of the signers, who are both highly aware of the differences between RSL and Signed Russian, I used the written version of the questionnaire. They were asked to read the description of the situation, and then produce the sentence using all the glosses (STEAL and BIKE in (6)), and probably some other signs, if necessary. After the first round of production, I discussed each of the situations again in order to find out which impersonal strategies could be used. With two other signers, I used a slightly different procedure. First, the contexts for each item in the questionnaire were translated into RSL by a native signer. Then these contexts were presented to the signers as video clips, followed by written representations of glosses for the target sentences (so for instance, for example (6), the context was provided by a video clip in RSL, followed by the written words STEAL BIKE). After the initial production, I also discussed other possible ways of expressing the same meaning with the signers.[5]

While conducting elicitation, I faced several methodological challenges. Firstly, some of the contexts in the questionnaire are very easily construed as being not impersonal. One example of such context is (7), in which the natural target sentence would be "You should not lie!", where *you* refers to the son. In such cases, I thus had to additionally discuss the sentence asking for a general statement, for instance not referring directly to the son in (7) (see also Kelepir et al., this volume, for discussion of such contexts in Turkish Sign Language).

(7)   Context: A mother realises that her son has been lying to her for a while: he has not gone to high school for a week but didn't say it at home. When he arrives home, the mother makes a general claim:
SHOULD NOT LIE

Secondly, one should be careful when eliciting the impersonal sentences to make sure that the verb in question can also be used in non-impersonal contexts (as a transitive verb). For instance, RSL has both a transitive BURN(T) and an intran-

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4.   One of the signers is a hard-of-hearing child of deaf parents, the others are deaf.

5.   The reason to use signed stimuli for these two signers was to minimize potential influence of Russian on their judgments. Although the first two signers were comfortable in distinguishing RSL and Signed Russian, many signers do not have strong intuitions on the boundary between the two systems. Ideally, all elicitation should have been conducted with signed stimuli only. The potential variation introduced by the combination of two types of stimuli is further addressed by the felicity judgment experiment where only RSL stimuli were used.

sitive BURN(I); the latter cannot be used with an Agent. If BURN(I) is used in an impersonal context, this cannot be analyzed as an impersonal strategy, as there is no Agent in the argument structure at all. For a discussion of this issue in LSC, see Barberà & Cabredo Hofherr (2017). In addition, I found at least one verb that can only be used impersonally (see Section 4.3).

Thirdly, I encountered some variation between the signers during the discussion of the usage of alternative strategies in some contexts. Therefore, I also used a formal felicity judgment experiment to investigate these contexts further.

The advantage of the formal experiment for this study is two-fold. First, in the experiment, I only used signed stimuli, which diminishes potential influence of Russian. Second, a larger sample of signers was used to avoid large effects of random variation in judgments. The disadvantage of the formal experiment is that it is much more time-consuming, so it was not realistic to collect formal judgments for all impersonal contexts and all strategies. In addition, a formal study was not suitable for the initial investigation of the topic because I did not know in advance which strategies were available to express impersonal reference in RSL.

I conducted the felicity judgment experiment with sixteen signers in Moscow: four men and twelve women. The participants were recruited via cultural establishments for the Deaf (a Deaf theater and a museum with a program for Deaf visitors). Ten of the signers had at least one deaf parent and all of the signers were using RSL on daily basis.[6] The signers were instructed to watch video recordings in RSL on my laptop screen; each recording consisted of a context followed by a black screen and the target sentence. The participants were asked to click on one of five buttons (ranging from a red button for "terrible" to a green button for "perfect") below the video to evaluate the acceptability of the sentence in the context, that is, felicity. Note that all sentences are potentially grammatical, but may be non-felicitous in the context strongly implying the impersonal reading.

Based on the initial non-experimental elicitation with four signers, I identified three domains for which further investigation was necessary, namely (i) the use of pro-drop and SOMEONE in existential contexts, (ii) the use of IX_{pl} in universal contexts, and (iii) the use of IX_2 in conditionals. Therefore, I created test items for these three topics.[7] Following the guidelines for experimental design in Gries (2013) and Schütze & Sprouse (2014), I created multiple items for the same condition and multiple variants of the test, spreading the items in a way that the

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6. I used the data from all 16 signers and not only from the 10 signers with deaf parents in order to have more power for statistical analyses. To take this into account, I included nativeness as predictor in the models (see Section 4), although its contribution was never significant.

7. This means that I conducted three separate studies, but in practice they were combined in one data collection session. Thus each of the participants evaluated items for all three studies.

same signer never saw both variants of the same item. For instance, one participant would see an existential sentence A with pro-drop and a similar sentence B with SOMEONE, while another participant would see sentence A with SOMEONE and sentence B with pro-drop. Altogether, each participant saw 12 test items (4 items per domain) and 24 distractors (8 of which were training items, another 8 were specifically designed non-felicitous sentences, and the rest were test items for other projects not related to impersonal reference, both felicitous and non-felicitous). The order of items was pseudo-randomized so that the training items came first, the test items were never following each other, and the order was different for each of the eight variants of the test. The results of this test were then investigated statistically.

Finally, the third source of data is the RSL corpus (http://rsl.nstu.ru/). The corpus contains recordings of 43 signers of RSL from different regions; the data mainly consists of narratives (spontaneous or retellings of cartoons) and some dialogues. The corpus has been glossed (separate tiers for the right and left hands), and sentence translations are provided. Not surprisingly, no special annotations have been created specifically for impersonal reference, so impersonal contexts had to be found by indirect means. For instance, I searched for the word *someone* and the word *who* (in Section 4.2, I show that WHO and SOMEONE are identical or at least related signs in RSL). In addition, I looked for impersonal constructions in sentence translations, searching for the third person plural verb marking, the second person singular verb marking, and the second singular personal pronoun which are all used for impersonal reference in Russian. Although this does not in any way guarantee finding all the impersonal contexts, it provided me with a number of examples which were used to confirm that the strategies discovered through elicitation are also attested in naturalistic data. Examples from the corpus in this paper are always accompanied with a link to the corpus website.[8]

The advantage of using corpus data is that it is naturalistic, so no bias is introduced by me as the researcher. On the other hand, corpus data is very limited in size and does not contain negative judgments. Thus, it can only be used in addition to the other two methods.

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8. Note that registration is required to be able to access the corpus.

4.   Impersonal strategies

In this section, the results of the study are presented.[9] RSL uses a variety of strate-
gies to express impersonal reference. The most general strategy that can be used in
all contexts is pro-drop (Section 4.1). Another strategy is the indefinite pronoun
SOMEONE (Section 4.2). In some contexts, and according to some signers, the third
person plural pronoun IX_{pl} can be used (Section 4.3). The second person singu-
lar pronoun IX_2 is a more controversial case as I discuss in Section 4.4. I was not
able to find any indications that the first person plural, the first person singular,
the third person singular pronouns, or the sign ONE (all of which can be used to
express impersonal reference in some sign languages) could be used impersonally
in RSL. No modality-specific strategies were found either (see Section 5.2 for some
discussion of the use of high loci not related to impersonal reference).

4.1   Pro-drop

Pro-drop, that is zero expression of the impersonal argument, is the most com-
mon strategy in RSL. It appears that pro-drop can be used in all impersonal con-
texts. I illustrate here examples representative of the seven contexts identified by
Gast & Van der Auwera (2013) in the ascending order (8–14), and the eighth con-
text of the verbs of saying (15). All other contexts from the questionnaire have
been tested as well with the same result. Note that all the verbs in the examples
below can also be used transitively with a specific referent as a subject.

(8)   BIKE IX PU STEAL
      'They have stolen my bike.'

(9) IX_a[10] LOOK CHESS PLAY PST IX_a
      'It looks like they played chess over there.'

(10)   AGAIN TAXES RAISE
      'They've raised the taxes again.'

$$\overline{}^{\text{br}}$$
(11) $\overline{\text{IX}_a}$ FRANCE, EAT SNAIL U-L-I-T-K-A[snail]
      'In France, they eat snails.'

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9. Note that this study did not systematically investigate the role of non-manual markers
in impersonal contexts. Section 4.2 briefly discusses non-manuals accompanying the pronoun
SOMEONE, but further investigation of the general facial expression of uncertainty in other
impersonal contexts is necessary.

10.   The pointing sign IX_a here is used in a locative function ('there').

(12) WELL LIVE ONE.TIME[11]
'Well, you only live once.'

(13) LIE$_{3pl}$[12] MAY-NOT
'One should not lie (to other people).'

<u>   _{br}   _{bht}   </u>

(14) MILK SOUR DRINK, CONTINUE WHAT FUT?
'If one drinks sour milk, what will happen?'

(15) SAY DRINK A-LOT
'They say he drank a lot.'

It is clear that plain verbs can be used in this construction as well. Consider example (16), where the plain verb THINK is used impersonally. Agreeing verbs when used impersonally show neutral agreement (no agreement) for the subject slot, but can still show agreement for the object slot which is not impersonal (17). Pro-drop is also possible with classifier predicates (18).

(16) AMERICA THINK RUSSIA SMALL
'In America, they think that Russia is small.'

(17) TV SAY$_1$ TOMORROW FUT SUN
'They said on TV (lit.: to me) that it will be sunny tomorrow.'

(18) BOOK PST CL:HL(B)-LOC$_a$, CL:HL(B)-LOC$_b$ SHELF CL:HL(B)-LOC$_b$
'The book was there [on the table], but someone moved it to the shelf.'

In generic impersonal contexts, the verb might be marked with simple reduplication (19), or with two-handed alternating reduplication (20) to express quantification over events. However, this marking is also present in similar non-impersonal contexts (Burkova & Filimonova 2014).

(19) NEIGHBORHOOD BIKE STEAL-RED OFTEN
'In this neighborhood, they often steal bikes.'

(20) SAY$_1$-2h.ALT IX$_a$ DRINK A.LOT
'They tell me he drank a lot.'

In the generic universal external contexts, e.g. when talking about habits and rules in a country, a special auxiliary LIKE.THIS can be used, as in (21). However, this auxiliary is also not restricted to impersonal contexts. In addition, a question-answer sequence (Caponigro & Davidson (2011); see also Wilbur (1996) for a

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11. The signs LIVE and LIFE are probably phonologically identical in RSL; however, ONE-TIME is clearly adverbial and does not combine with nouns.

12. This verb shows object agreement with the third-person plural object.

wh-cleft analysis of this construction) can be used in impersonal contexts; this strategy is again not specific to impersonals (22).

(21) $\overline{\text{IX FRANCE LIKE.THIS EAT SNAIL}}^{\text{br}}$ U-L-I-T-K-A[snail]
    'In France, they eat snails.'

(22) $\overline{\text{IX R-O-M[rum] MAKE HOW}}^{\text{br}}$ ADD(T) SUGAR
    'They make rum by adding sugar.'

Finally, I encountered some variation in the judgements the signers provided for the usage of pro-drop in some contexts. In particular, two of the signers disallowed pro-drop in some existential contexts; however, they were not in agreement with each other, and also within one signer, some contexts which would be characterized as belonging to the same type showed different behavior. For instance, one signer allowed pro-drop for "Someone is knocking on the door", but not for "Someone is ringing the bell". This is especially intriguing because the verbal signs in both sentences are classifier predicates. Moreover, corpus data confirmed the intuition of the other signers that pro-drop can be used in anchored existential contexts, as (23) shows. I therefore decided to further investigate this strategy for existential contexts in a formal experiment. I report the results in the next section, as I also investigated the use of the indefinite pronoun SOMEONE in the same contexts.

(23)   BUS COME. SPEAK NUMBER
    'The bus came, and they announced its number.'[13]

4.2   The indefinite pronoun

Another strategy that is relatively common for impersonal contexts is the indefinite pronoun SOMEONE. This pronoun is not a dedicated R-impersonal pronoun: it can be used to introduce a referent, and it cannot be used in simple generic or in corporate readings (see the Introduction to the special issue). RSL also has an inanimate indefinite pronoun SOMETHING.

The pronoun SOMEONE is formally related if not identical to the question word WHO.[14] This might be related to the fact that these pronouns are formally related in Russian as well: *kto* 'who' and *kto-to* 'someone'. The RSL signs are initialized: they use the K-handshape in the articulation of the sign, so their relation to Russian is quite obvious (Figure 2).

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13.   http://rsl.nstu.ru/data/view/id/198/t/645310/d/647340

14.   I motivate the decision to use separate glosses for these two signs below.

Figure 2. Sign WHO in RSL

A more difficult question is whether SOMEONE and WHO are in fact two different signs. Burkova & Filimonova (2014), in their study of reduplication in RSL, argued that simultaneous two-handed reduplication can be used to derive the indefinite pronoun from the question word. However, in my elicited data, the indefinite pronoun was never used in the two-handed form, so this type of derivation might be restricted to only some varieties of RSL. Another possible difference between SOMEONE and WHO could be the number of repetitions (simple reduplication). However, it seems that the number of repetitions varies between signers. In particular, one of the signers sometimes used a non-reduplicated sign for SOMEONE (one short forward movement), and sometimes a reduplicated sign (two movements); one signer sometimes used two movements, but in some cases three movements; and two signers consistently used this sign with two movements. In the corpus, all cases of SOMEONE I could find had one movement only (24). The question word WHO in the corpus and in the elicited data is sometimes used with two (25), and sometimes with one movement (26).

(24) QUICK. IX CL(1)-MOVE SOMEONE
      'Quickly [look], someone is moving there.'[15]

(25) BUILD WHO-RED?
      'Who built it?'

(26) WHO COME?
      'Who will come?'

Two of the signers used a special form for SOMEONE which involved additional sideward movement (Figure 3). I have found no examples of WHO in the corpus involving such a movement; however, even if this form is restricted to the indefinite pronoun, it is clear that the indefinite pronoun does not always contain sideward movement.

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15. http://rsl.nstu.ru/data/view/id/218/t/192880/d/194610

Figure 3. Sign WHO with sideward movement in RSL

Another possible difference between SOMEONE and WHO could have been the mouthing: one might expect the indefinite word *kto-to* to be mouthed with SOME-ONE. However, here again, there is variation between signers. One signer did not use mouthing on any instance of SOMEONE. Another signer (who also showed variation in the number of repetitions in SOMEONE) sometimes mouthed *kto-to,* and sometimes *kto*. Two of the signers consistently used the mouthing *kto-to*.

The last potential systematic difference between SOMEONE and WHO concerns non-manual markers. It has been shown that in some sign languages, indefinite pronouns are accompanied with a particular non-manual expression (Barberà & Quer 2013). In fact, a candidate expression can be found in my elicited data as well; it can be characterized as uncertainty expression: furrowed eyebrows, wide open eyes, sideward or upward gaze, lowered corners of the mouth, and slightly raised shoulders, as in Figure 4, example (27). This expression is iconically motivated, as it reflects confusion and lack of knowledge of the identity of *someone*, and is also used as such by hearing speakers of Russian.

Figure 4. Sign WHO accompanied with uncertainty non-manuals

(27)   <u>uncertain</u>
       SOMEONE BIKE STEAL
       'Someone has stolen my bike.'

However, as with other potential differences between SOMEONE and WHO, this difference is not systematic. In fact, this uncertainty expression (as a constellation of all non-manual features described above) has been found in only three clear cases in the elicited data. In the corpus, all instances of SOMEONE were either accompanied with a neutral non-manual expression, or with raised eyebrows due to being a part of a conditional clause (Burkova 2012). In the elicited data, SOMEONE was sometimes accompanied with raised or furrowed eyebrows, or with neutral non-manual expression, or the conditional non-manual marking.

To sum up, there are no convincing reasons to differentiate SOMEONE and WHO in RSL. For some signers, mouthing is distinctive, but whether mouthing is a part of RSL, or a code-switching phenomenon (Bank 2014) is debatable. I also discussed this issue with the signers: one suggested that there is no special sign for SOMEONE and that it is the sign WHO which is used in these contexts; however, three of the signers claimed that SOMEONE was a separate sign. For this reason alone, I continue glossing it as SOMEONE, although WHO might be theoretically more appropriate.

SOMEONE in RSL is quite similar in distribution to indefinite pronouns in other languages, in particular, to Russian *kto-to*. It can be used in anchored existential (28), vague existential (29), indirect evidential existential contexts (30), in existential contexts with a plural impersonal referent (31),[16] and in conditionals (32). It cannot be used in unrestricted universal contexts outside conditionals (33). Speaking in terms of Gast & Van der Auwera, it can be used in contexts 1, 2, and 7.

(28) IX SOMEONE RING
      'Someone is ringing the bell.'

(29) SOMEONE HOUSE DOOR-OPEN, BURGLARIZE
      'Someone broke into my house and burglarized it.'

(30) SOMEONE WOOD BURN IX$_a$ PST IX$_a$
      'Someone was burning wood over there.'

(31) IX$_a$ SOMEONE CHESS PLAY IX$_a$
      'Someone was playing chess here.'

$$\overline{}^{\text{br}}$$
(32) SOMEONE BOSS RUDE PST, WORK FLY.OUT PERF
      'If someone is rude to his boss, he loses his job.'

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16. This example does not have an unambiguous plural interpretation, as it is possible to play chess against oneself. However, I explicitly asked whether this sentence could be used to express the meaning that apparently two people were playing chess, and the signers accepted this interpretation.

(33) *SOMEONE LIVE ONE.TIME
'You only live once.'

Finally, it is necessary to mention that SOMEONE is sometimes accompanied with a pointing sign, so it is assigned a locus in the signing space (34). This would be unexpected for an impersonal pronoun, but it is not unexpected for an indefinite pronoun. The referent introduced by SOMEONE can be referred back to by a pronoun, as in (35).

$$\overline{}^{\text{br}}$$

(34)   SOMEONE IX$_a$ PREGNANT IX$_a$, SMOKE PROHIBITED
'If someone is pregnant, she shouldn't smoke.'

(35)   SOMEONE DRINK, IX$_a$ DRIVE PROHIBITED
'If someone drinks, he shouldn't drive.'

As in the case of pro-drop, there was disagreement between the signers concerning when SOMEONE can be used. All signers allow SOMEONE in conditionals; however, some of the signers show restrictions in anchored, vague, and indirect existentials which are difficult to pin down, for instance because the same signer would allow SOMEONE in one vague existential context ("Someone has broken into my house") and not allow it into another such context ("Someone has stolen my bike").[17] In the corpus data, I found examples of SOMEONE in anchored existentials (24) and vague existentials (36). The fact that I did not find inferential existential contexts is not informative, as such contexts are generally less common. I therefore decided to include the use of SOMEONE in existential context into the formal experiment.

(36)   YESTERDAY EVENING SOMEONE DEFECATE CL(A)-FALL
'Yesterday evening someone defecated on it [the turtle].'[18]

I included four existential contexts in the formal experiment: someone is ringing the bell, someone is knocking on the wall, someone is drilling the wall, and someone is cooking BBQ next door. As discussed in Section 3, the setup of the experiment was such that the same context was followed by the test item either with pro-drop or with the pronoun SOMEONE. Figure 5 is a graphical representation of

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17.   As was the case for pro-drop, the source of this variation is unclear because the predicates in both sentences are of the same type (in this case, lexical verbs).

18.   http://rsl.nstu.ru/data/view/id/237/t/198270/d/203740

the score (z-transformed)[19] that the participants gave to the items of three types: test items with pro-drop, test items with SOMEONE, and fillers.
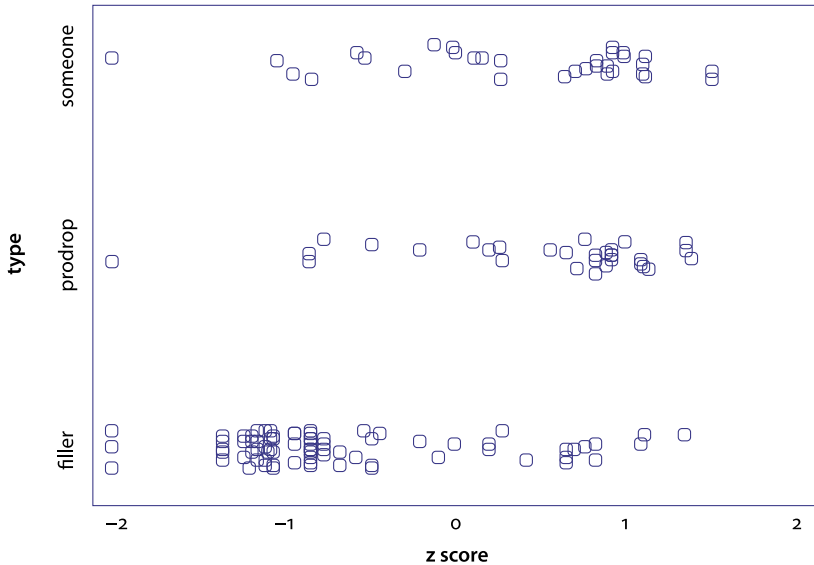

Figure 5. Z-scores for existential impersonal sentences with SOMEONE and pro-drop, and fillers

As should be clear from Figure 5, existential sentences with pro-drop and SOME-ONE got clearly higher ratings than the non-felicitous fillers. This was also confirmed by statistical analysis. A mixed-effect linear regression model[20] showed that the two impersonal contexts were perceived as 1.24 standardized points higher than the fillers (95%CI: 0.93..1.55, $p < 0.001$). No significant difference was found

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19. Following Schütze & Sprouse (2014), the scores analyzed and reported here are not the absolute scores (1 to 5) given by the participants, but the z-scores of the responses per participant. This eliminates the possible scale bias: some participants might only use judgments 3 to 5, while others might use all options, so the difference in 2 points might have different meanings for different participants. I also additionally ran all the models with absolute scores and the results were nearly identical.

20. I used the *lmer* function of the *lme4* package (Bates et al. 2015) in R (R Core Team 2016), with sentence type (pro-drop/SOMEONE/filler), order of presentation, and nativeness and their interactions as fixed factors, and subjects as a random factor (with random slopes for sentence type). Two orthogonal contrasts are included in the model: between fillers and the two impersonal contexts (null hypothesis: impersonal contexts are equally non-felicitous to fillers), and between the two impersonal contexts (null hypothesis: the two impersonal contexts are equally felicitous). Nativeness, order of presentation, and all interactions are never significant predictors.

between items with pro-drop and items with SOMEONE ($p = 0.7$). This means that I did not find evidence that pro-drop and SOMEONE are different in felicity in existential contexts, but I found evidence that both strategies are in fact felicitous.

4.3   IX_{pl}

Three of the signers in the elicitation task used the plural pointing sign IX_{pl} in impersonal contexts, in particular, in locative universals (37), universals without a modal (38), and in one of the cases of verbs of saying (in "They say he drinks a lot", but not in "They said on TV it would be sunny", see Section 5 for further discussion) (39).

(37) $\overline{\text{CHINA, IX}_{\text{pl}}}^{\text{br}}$ LAST WEEK NEW YEAR IX_{pl} CELEBRATE
       'In China, they celebrated New Year last week.'

(38)   IX_{pl} LOOK CLEAR DRUNK
       'They could see he was drunk.'

(39)   IX_{pl} SAY-IMPER IX_a DRINK A.LOT
       'They say he drinks a lot.'

It should be noted that the form of the sign IX_{pl} in my data varies: it can be articulated with a palm facing downwards, or with a palm facing upwards. These different forms might in fact have different functions, so further investigation is needed.

Example (39) also shows an interesting phenomenon: the impersonal verb SAY-IMPER (Figure 6) cannot be used with a referential subject (40), only without a subject, or with IX_{pl} as a subject, as in (39).

(40) *IX_a SAY-IMPER IX_b DRINK A.LOT
       Intended meaning: 'She says that he drinks a lot.'

Figure 6. Sign SAY-IMPER

All three signers who use ix_{pl} in impersonal contexts use it only in contexts where (quasi) universal interpretation is possible. Two facts are of interest here. First, one signer commented that ix_{pl} simple means 'all', although there are separate lexical signs which are used as universal quantifiers (see Kimmelman 2017). One signer who did not use ix_{pl} in any of the impersonal contexts suggested using the universal quantifier ALL instead. Second, another signer commented on the unacceptability of example (41) that it can be used but it implies that everyone, including children, has to go to work at 8.

(41) $^?$GERMANY ix_{pl} 8 HOUR MORNING START WORK
     Intended meaning: 'In Germany, they start working at 8.'

Moreover, in another universal context from the questionnaire ("One makes rum with sugar") the use of ix_{pl} was dispreferred. It might be the case that this context can be characterized as existential habitual (some people there make rum with sugar cane) or a corporate context (people who make rum make it with sugar cane), and not as a universal without a modal. Another interpretation is that this example is a universal, but the domain of quantification here is relatively small (producers of rum, who all use sugar cane vs. people in France, almost all of whom eat snails).

Since signers were again in disagreement with respect to the use of this strategy, I included it in the formal experiment. Four contexts were used: they eat snails in France, they eat dogs in China, they eat insects in India, and they eat sharks in Norway. Each test item was recorded with pro-drop or with the plural pronoun ix_{pl}.[21] Figure 7 is a graphical representation of the z-scores that the participants gave to the items of three types: test items with pro-drop, test items with ix_{pl}, and non-felicitous fillers.

The graphic shows that both pro-drop and ix_{pl} in universal sentences received much higher scores than the fillers, but it is also clear that the ix_{pl} scores are more spread. A mixed-effect linear regression model showed that the two impersonal contexts were perceived as 1.19 points higher than the fillers (95%CI: 0.91..1.48, p-value<0.001). No significant difference was found between items with pro-drop and items with ix_{pl} (p-value$=0.1$). I conclude that there is evidence that both pro-drop and ix_{pl} can be used impersonally, but there is not enough evidence to suggest that one of the two strategies is more felicitous than the other.

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21. Due to a technical problem, the sentence "They eat insects in India" was only properly recorded with pro-drop and not with ix_{pl}. This was only discovered after data collection, which means that the number of scores for ix_{pl} is smaller than for pro-drop in this study.
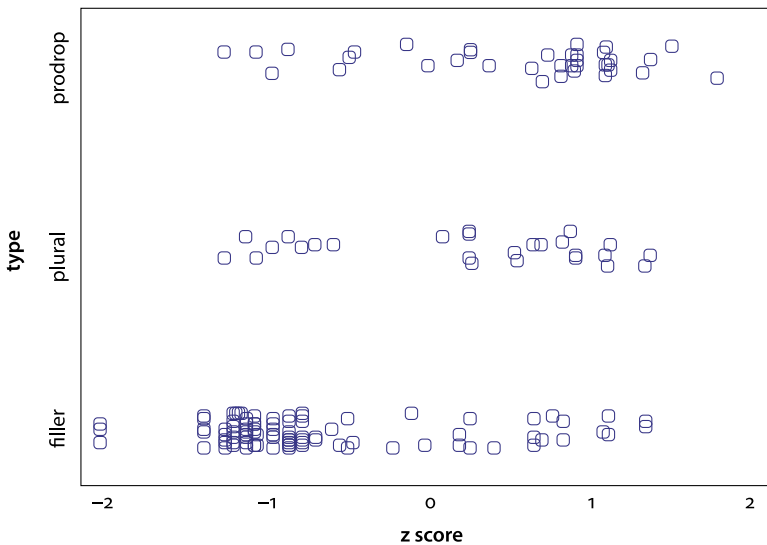
Figure 7. Z-scores for universal impersonal sentences with pro-drop and plural IX_{pl}, and fillers

4.4 IX_2

In some languages, second person (either in pronominal form, as in English, or verbal agreement, as in Russian) can be used in impersonal contexts. In the elicitation, some instances of IX_2 have been produced by the RSL signers, in contexts like (42).[22] However, in the subsequent discussion, the signers explicitly told me that this pronoun can only refer to the addressee, so it could be used in these situations due to the fact that the sentence could be interpreted referentially, as discussed in Section 3. Impersonal use (general statement) was not possible, according to the signers.

(42) IX_2 LIVE ONE TIME
'You only live once.'

I did, however, find one example of IX_2 in the corpus used in the apodosis of an impersonal conditional (43). The context makes it clear that the signer does not refer to the addressee; it is a discussion of the new rule introduced by the government. It might be possible to analyze this as an instance of code-mixing or influ-

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22. I have not investigated whether second-person verbal agreement in RSL can be used impersonally.

ence from Russian: note that in the same sentence in Russian, the second person
pronoun would be used (44).[23]

(43) $\overline{\text{ORDER IF SMOKE FUT IGNORE, IX}_2 \text{ FINE 1500 DASH 3000}}^{\text{br}}$
       'If you smoke, you will be fined with 1500 to 3000 [rubles].'[24]

(44) esli budesh kurit', tebja   oshtrafujut   [Russian]
       if   will.2SG smoke you.ACC fine.3PL
       'If you will smoke, you will be fined.'

However, since there were examples of the impersonal use of IX$_2$ produced by the
signers during elicitation and also in the corpus, I decided to investigate this strat-
egy further in the formal experiment. I created four items with conditionals where
the interpretation of IX$_2$ was necessarily impersonal. One item was about traffic
regulation explained to a child (you should not drink and drive), another was the
rule not to smoke while pregnant explained to a man, the third one was the rule
that people over 80 kg are not allowed to use the carousel explained to a small
child, and the final one was the rule that old people are allowed to sit in a particu-
lar place explained to a child. As in the other cases, each test item was recorded in
two ways: with pro-drop and with IX$_2$. The results are graphically represented in
Figure 8.

Figure 8 shows again that both pro-drop and IX$_2$ have higher scores than
fillers; however, the scores for the IX$_2$ test items seem to be lower and more
spread. A mixed-effect linear regression model showed that the two impersonal
contexts were perceived as 1.78 points higher than the fillers (95%CI: 0.91..2.65,
p-value < 0.001). No significant difference was found between items with pro-drop
and items with IX$_2$ (p-value = 1). I conclude that there is evidence that both IX$_2$ and
pro-drop can be used impersonally in these contexts.

The formal experiment here produced results that were different from the
results of the informal elicitation task. It seems that for the majority of signers the
use of IX$_2$ in impersonal contexts is felicitous, albeit slightly less so than the use of
pro-drop. On the other hand, when asked directly, the four signers who partici-
pated in the elicitation task were not accepting this strategy. So, the explicit intu-
itions of signers (no IX$_2$ in impersonal contexts) differ both from the use (recall
that they themselves produced IX$_2$ in some contexts) and less explicit judgments

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23. Note that in the first clause, the second person pronoun is the subject (and it is omitted),
so the verb also shows second person agreement, while in the second clause, the second person
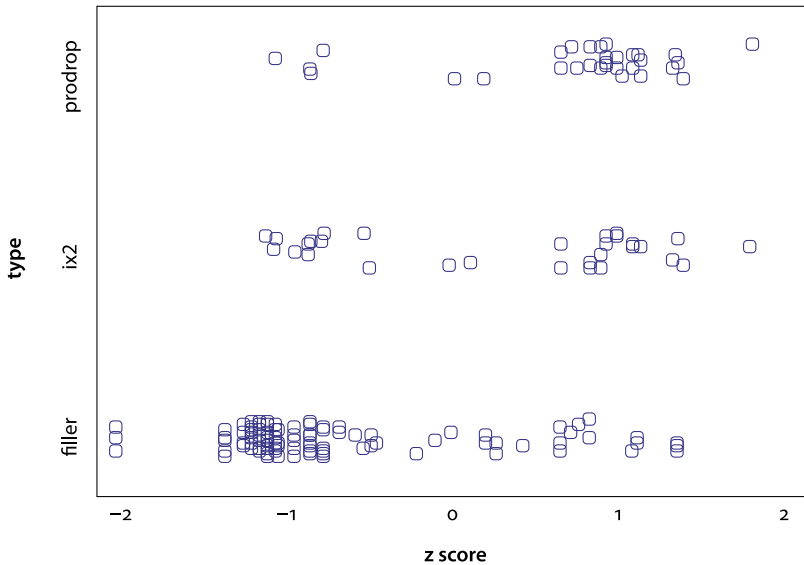pronoun is in the object position.

24. http://rsl.nstu.ru/data/view/id/117/t/24850/d/28590

Figure 8. Z-scores for conditional impersonal sentences with pro-drop and IX₂, and fillers

elicited in a controlled experiment (IX$_2$ is allowed in impersonal contexts). I discuss a possible explanation for this pattern in Section 5.3.

5.   Discussion

The results reported in the previous section deserve some discussion. In particular, three aspects of impersonal marking in RSL are interesting: the place of the impersonal strategies on the semantic map from Gast & Van der Auwera (2013), the lack of modality effects in the impersonal domain, and the relation between RSL and (spoken, written and signed) Russian.

5.1   Impersonal strategies on the semantic map

RSL appears to be fully compatible with the semantic map proposed by Gast & Van der Auwera (2013). Pro-drop, as discussed above, is used in all 7 of the contexts identified by Gast & Van der Auwera (and also in all the contexts mentioned in the questionnaire). Thus, this strategy in RSL patterns with impersonal pronouns, like *man* in German, *men* in Dutch, and *one* in English. However, pro-drop in RSL is by no means restricted to impersonal reference. A referent that has been

introduced in the discourse can be referred back to by a *pro*. Thus, pro-drop is a very common strategy which can also be used in impersonal contexts.

The second common strategy is the use of the indefinite pronoun SOMEONE. As mentioned above, this pronoun can be used in anchored, vague, and indirect existentials, also in existentials with a plural impersonal subject, and in conditionals. This means that it also conforms to the map, as it covers an uninterrupted region 7-1-2.

As is the case with pro-drop, this strategy is not a dedicated R-impersonal strategy: it is primarily an indefinite pronoun, which as discussed above can be used to establish a referent. This is also the case for similar pronouns in spoken languages (e.g. *someone* in English), but Gast & Van der Auwera (2013) still use them to argue for the circular shape of the semantic map.

IX_{pl} can be used in locative universals, universals without a modal, and in some cases of verbs of saying. Again, this means that this pronoun covers a trivially uninterrupted region on the map, namely it can be used in the type 4 contexts.

Finally, the second person pronoun IX_2 can clearly be used in conditionals (as shown by the formal experiment), and probably also in contexts 5 and 6, but this needs further investigation.

It is also worth discussing the verbs of saying in relation to this way of marking impersonal reference. As mentioned above, in one of the contexts from the questionnaire ("They say he drinks a lot") the use of IX_{pl} was allowed, but it was not accepted in the other context ("They say on TV it would be sunny"). If one looks at verbs of saying as a separate class, this is unexpected. However, within the classification from Gast & Van der Auwera (2013), the former context could be classified as generic universal external (everyone says that he was a drunk), while the latter as episodic existential indefinite (someone on TV said it would be sunny), so the difference becomes expected once more.

5.2   The role of modality

As I have shown in the previous sections, the strategies that RSL uses (pro-drop, an indefinite pronoun, and a third person plural pronoun) are not modality-specific, in fact, they are common in spoken languages. I have also explicitly checked whether the modality-specific strategies reported for Catalan Sign Language (Barberà & Quer 2013) could be used in RSL. It turned out that they cannot. High loci are not used in impersonal contexts in RSL: neither the third person plural pronoun IX_{pl}, nor the indefinite pronoun SOMEONE is localized above the neutral space.

There are two cases in which the high loci are used in RSL in the elicited contexts. One case is the pointing sign following the country names, as in (45).

However, this form of pointing is not restricted to impersonal contexts, and has to do with expressing the distance: pointing upwards metaphorically represents the longer distance to the referent (see also Barberà (2012b) for similar observations for Catalan Sign Language).

$$\overline{}^{\text{br}}\overline{}^{\text{br}}$$

(45)   IX$_{\text{up}}$ FRANCE PU, 8 EVENING SLEEP
        'In France, they go to bed at 8 in the evening.'

Another case concerns a singular upward pointing sign which can be used to refer to the government, as in (46). This is indeed a modality-specific feature reported for other sign languages (Liddell 1990; Barberà 2012b), whereby higher authority is associated with a high locus. However, this usage of the upward location for the government again is not impersonal, as it can also apply in cases where the signs GOVERNMENT or MINISTER are used.

$$\overline{}^{\text{br}}$$

(46)   IX$_{\text{up}}$ AGAIN TAXES RAISE
        'They raised the taxes again.'

Of course, it is not a very surprising finding that RSL does not use modality-specific strategies for impersonal reference that are attested in some other sign languages. However, it is sometimes tempting to equate modality effects with universality in sign languages, despite the fact that it has been shown for many modality-specific features of sign languages that there are some sign languages lacking this feature (for instance, Adamorobe Sign Language almost completely lacks manual simultaneity, among other things, see Nyst 2007).

5.3   Contact with Russian

In the presentation of the results in Section 4, possible Russian influences have been mentioned at several points. It is indeed clear that RSL, being in constant contact with Russian, primarily through its written and signed forms, is influenced by it, also for impersonal reference.

Importantly, it is possible that some code-switching to Signed Russian was present during elicitation of the data using the questionnaire. However, the formal experiment part of the study, which tested all the strategies, did not include any Russian stimuli, so these impersonal strategies could not be discarded as simple instances of Signed Russian.

Turning to the possible interactions with Russian, first, Russian also uses pro-drop as a common strategy to express impersonal reference. Note, however, that Russian pro-drop in impersonal contexts is different, because verbs contain agreement marking: the third person plural marking (used in contexts 1–4 on the map),

or first person plural (used in context 5), or second person singular (used in context 7). In context 6, a special modal impersonal construction can be used, also without an overt subject. RSL seems to unify all these contexts with a simple pro-drop strategy, but since all the Russian strategies also involve subject omission, Russian might be the source of influence here. On the other hand, my research on Sign Language of the Netherlands (NGT, Kimmelman 2015) has shown that this language also uses pro-drop in all impersonal contexts, despite the fact that Dutch does not allow pro-drop in any of them. Pro-drop is a common phenomenon in all sign languages described so far. Thus, there is no strong evidence that pro-drop in RSL is influenced by Russian.

Second, RSL has clearly borrowed the question word *kto* 'who' and a related indefinite pronoun *kto-to* 'someone' from Russian, as the corresponding signs in RSL are initialized and related to each other (or even indistinguishable). Moreover, Russian *kto*, similar to RSL SOMEONE can be used in contexts 7, 1, and 2 (in conditionals, singular existentials, and plural indefinite existentials). The difference between RSL and Russian lies in the fact that, in Russian, *kto* and *kto-to* are clearly distinguishable. However, the question word *kto* in colloquial Russian can be used in an impersonal conditional (47), which might again have influenced RSL. On the other hand, the use of question words as indefinite pronouns is typologically very common (Haspelmath 2013), so theoretically, it might have arisen in RSL independently (although it is unlikely due to the initialization of the signs).

(47) esli kto kurit, ego arestujut   [Russian]
      if   who smoke him arrest.FUT
      'If someone smokes, he will be arrested.'

The use of the third person plural pronoun *oni* 'they' is also possible in Russian in type 4 contexts (universal external). However, it seems not to be possible with verbs of saying, so RSL differs from Russian in this respect (48).

(48) (*oni) govorjat on pjanitsa   [Russian]
      they   say.3PL   he drunk
      'They say he is a drunk.'
                               (with the overt pronoun, it means that specific people say it)

Finally, as I mentioned in Section 4.4, RSL might be in the process of borrowing the use of the second person singular pronoun in impersonal contexts. The fact that the process is ongoing might explain the difference between the results of the elicitation task and the formal felicity judgment experiment. When asked directly, the signers might become aware of the fact that the use of the second person pronoun looks like (Signed) Russian and therefore reject it. However, when the focus is not directed at the pronoun itself, the sentences containing IX$_2$ are judged as

felicitous even in the clearly impersonal contexts. Another interpretation that cannot be completely excluded is that in the felicity judgment task, the signers are less critical to the instances of Signed Russian in general. At this stage, it is impossible to state clearly whether the impersonal IX_2 is a part of RSL itself.

To sum up, impersonal marking in RSL on the surface level is quite similar to the strategies used in Russian. For one of the strategies (the use of the indefinite pronoun), the influence is very clear, although some differences between RSL and Russian remain. For pro-drop, the Russian influence cannot be excluded, but other sign languages show that pro-drop is a strategy that can emerge without any external influence, and it is also a very common strategy for RSL in general, so the relation to Russian is not likely here. For the third person plural and second person singular pronouns, again the relation with Russian is possible, but RSL is never completely mirroring the Russian use.

In general, when we see similarities between RSL and Russian, there are three theoretical possibilities:

i.   It is coincidental (e.g. the languages are typologically similar);
ii.   It is borrowing;
iii. It is code-switching.

In the domain of impersonal reference, all three scenarios might apply. The first explanation (coincidental typological similarity) seems likely for the use of pro-drop. The second explanation at least partially applies to the case of SOMEONE: the sign is initialized, so it is clearly borrowed, although the fact that this strategy is typologically common might also play a role. The case of IX_2 in impersonal contexts might be explained by borrowing or even code-switching. This study does not allow conclusively establishing the status of IX_2.[25]

6.   Conclusions

In this paper, the first description of expression of impersonal reference in RSL has been presented. Based on questionnaire-based non-experimental elicitation, a formal felicity judgment task, and corpus data, it has been shown that RSL

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25. I do not want to claim that Russian influence on RSL is restricted to or even more pronounced in the domain of impersonal reference. In fact, it is present in many domains, and the difference between coincidental overlap, borrowing, and code-switching is relevant elsewhere. For example, Burkova (2012) discusses the counterfactual conditional marker B-Y which is clearly borrowed (as it is a fingerspelling of the Russian particle with the same function), but also syntactically different from its Russian counterpart.

does not have a specialized impersonal pronoun, but that it uses four strategies in impersonal contexts. The most common strategy used in all contexts is pro-drop, and in addition the indefinite pronoun SOMEONE, the third person plural pronoun IX$_{pl}$, and the second person pronoun IX$_2$ can be used, although judgments vary for this strategy. I did not find modality-specific strategies of impersonal reference in RSL. Furthermore, all the strategies are in agreement with the predictions of the semantic map of impersonal reference proposed by Gast & Van der Auwera (2013). Possible influence from Russian on the expression of impersonality has also been found. However, no impersonal strategy in RSL completely coincides with Russian strategies.

Acknowledgements

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