Topics and topic prominence in two sign languages

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Abstract

In this paper we describe topic marking in Russian Sign Language (RSL) and Sign Language of the Netherlands (NGT) and discuss whether these languages should be considered topic prominent. The formal markers of topics in RSL are sentence-initial position, a prosodic break following the topic, and non-manual markers, including eyebrow raise and backward head tilt. In NGT all these markers are used, too, but sometimes topics are also marked by clause-final pointing signs referring back to the topic of the sentence (sentence-final topic copying); this was not found in RSL. Topics in RSL and NGT are not marked obligatorily. Eyebrow raise and head tilt only mark shifted aboutness topics. In both RSL and NGT the VS order is used in thetic sentences. However, this strategy is optional, so the SV order is also accepted in thetic sentences. According to the criteria of topic prominence summarized by Sze (2008), RSL and NGT cannot be considered topic prominent. We argue that the notion of topic prominence should be considered gradual.
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1. Introduction

1.1. Topic prominence

In this paper we try to answer the question whether two European sign languages – Russian Sign Language (RSL) and Sign Language of the Netherlands (*Nederlandse Gebarentaal*, NGT) – are topic prominent. The notion of topic prominence goes back to Li and Thompson (1976) who argued for a four-way typology: all languages can be classified into ±topic prominent and ±subject prominent. In subject prominent languages (such as English or German), grammatical rules refer to the notion of subject, while in topic prominent languages (such as Chinese, Lisu and Lahu), the notion of topic is referred to by many grammatical rules. According to Li and Thompson, topic prominent languages have a number of characteristics that distinguish them from subject-prominent languages. In particular, topic prominent languages lack passives and dummy-subjects; also, they are predominantly SOV. The most important criterion is that in these languages topics have to be overtly marked. Within the generative grammar framework, Kiss (1995) refined the definition of topic prominence by focusing on this last property of obligatory topic marking. She claimed that topic prominent languages consistently differentiate thetic sentences from sentences with topics (categorical sentences).

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In the quest for understanding the notion of topic prominence, it is important to analyze data from various spoken and signed languages of the world. Research has shown that sign languages can make an important contribution to typology, as they represent a different modality but nevertheless share fundamental properties with spoken languages (Zeshan, 2008). Very little is known about cross-linguistic variation in the domain of topic prominence for signed languages. In fact, a direct comparison of topic marking and topic prominence in two or more sign languages has not been conducted before. In this paper, we aim to fill in this gap by discussing the results of our research on RSL and NGT. Before introducing the languages, we briefly summarize the results of previous research on topic marking and topic prominence in sign languages relevant to this study.

1.2. Topics and topic prominence in sign languages

From the early days of sign linguistic research, the notion of topic has been applied to sign languages (Friedman, 1976). In recent years research on various sign languages has demonstrated that they show some similarities with respect to topic marking. In particular, topics are marked by sentence-initial position and a certain set of non-manual markers in many unrelated sign languages.

Fronting, also known as topicalization, and in general sentence-initial position for topics can be found in various sign languages, including American Sign Language (ASL, Friedman, 1976), Israeli Sign Language (ISL, Rosenstein, 2001), Hong Kong Sign Language (HKSL, Sze, 2008), and Finnish Sign Language (FinSL, Jantunen, 2007). Note that sign languages share this tendency with spoken languages, as typological research showed (Gundel, 1988).

Another very common way of marking topics in sign languages is non-manual markers, such as eyebrow raise and backward head tilt. Sze (2011) found out that these markers are used to mark topics in ASL, NGT, Australian SL, and HKSL. Jantunen (2007) also described eyebrow raise as topic marker for FinSL. Although there are some differences in the choice of particular non-manuals in particular contexts (for instance, in ISL, according to Dachkovsky et al. (2013) most topics are marked with eye squints, and only half of the topics with raised eyebrows, while in ASL the opposite distribution of markers applies), the cross-linguistic similarities are still striking. Researchers also noticed that even if a topic is not marked by a distinct non-manual, it is usually separated from the rest of the sentence by a prosodic boundary, such as a pause, a head nod, or a blink (Sze, 2008, 2011).

There is some research on topic marking in NGT (Coerts, 1992; Crasborn et al., 2009), and the results suggest that topics in NGT can also be marked with sentence-initial position and the same types of non-manuals (in particular, eyebrow raise and backward head tilt) as in other sign languages. For RSL no research on topics specifically has been done before, but some researchers mentioned that topics can be marked by the initial position and eyebrow raise in this language as well (Prozorova, 2009).

The notion of topic prominence has also been applied in the analysis of sign languages (but not to RSL or NGT). Several researchers have explicitly claimed for specific sign languages, ASL (McIntire, 1982) and ISL (Rosenstein, 2001), that they are topic prominent. However, Sze (2008), in her discussion of topic prominence of HKSL, argued for a need to reconsider the criteria of topic prominence. Despite the fact that HKSL shares many features with ASL and ISL, she argued that it is not topic prominent.

Given the results of previous research on other sign languages, and some research on RSL and NGT, it was expected that topics in these two languages would be marked by sentence-initial position and by eyebrow raise and backward head tilt; however, a small-scale corpus-based investigation of topics also allows us to analyze frequency and distribution of topic markers. In addition, based on this research, we address the question of topic prominence that has not been addressed for RSL and NGT before.

1.3. RSL and NGT

RSL and NGT are most probably not related to each other.[1] RSL is a language used by deaf and hard-of-hearing people in Russia. According to the latest census organized in 2010, it is used by 120 000 people.[2] To date, there is very little linguistic research on RSL, and the notions of topic and topic prominence have not been examined before. NGT is a language used by deaf and hard-of hearing people in the Netherlands. According to Crasborn's (2001) estimation, it is used by 16 000 people. The two languages display many grammatical similarities (see Kimmelman, 2014 for details). In

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[1] Bickford (2005) argues that both languages are related to Old French Sign Language; however, no reliable evidence of such influence can be found for RSL.

[2] For preliminary results of the census (in Russian), see: http://www.rg.ru/2011/12/16/stat.html.

RSL the basic word order is SVO, but the SOV order is frequently attested as well; in the Amsterdam dialect of NGT, which is analyzed here, the basic word order varies between SVO and SOV (Coerts, 1994).

In this paper our aim is twofold: first, we want to describe how topics are marked in the two languages based on naturalistic corpus data, thereby also testing the findings of previous research; second, we want to find out whether these languages can be considered topic prominent or not, and discuss the consequences of our analysis for the general theory of topic prominence. The paper is structured as follows. In section 2 we discuss the methodology. Section 3 offers a description of topic marking in RSL and NGT, and section 4 describes how thetic sentences are marked. In section 5 we discuss topic prominence, and section 6 summarizes the findings.

2. Methodology

Since the notion of topic is intrinsically bound to context, it is necessary to study topics in naturalistic discourse. Analyzing corpus data also helps avoiding influence from spoken language, which can be an issue when traditional elicitation techniques are used (Van Herreweghe and Vermeerbergen, 2012). Therefore, this study is based on naturalistic corpus data from RSL and NGT.

In this section, we will first describe the data collection (section 2.1) and then the participants' characteristics (section 2.2). Finally, the procedure of topic identification is presented and the methodological decisions made are outlined (section 2.3).

2.1. Data collection

This paper is based on the analysis of data from two corpora: one of NGT and one of RSL. The NGT dataset we put together for this study represents a part of the Corpus NGT (Crasborn et al., 2008; Crasborn and Zwitserlood, 2008). Two types of signed texts were selected. First, the signers had to watch four episodes of the *Canary Row* cartoon (Freleng, 1950). Second, the signers were asked to tell personal stories. Each signer was supposed to tell two or three stories lasting 2–3 min each. The RSL dataset was collected by the author in 2011 in Moscow, Russia. In order to make the corpora comparable, the same tasks were used. The two corpora that form the basis for the present study each contain approximately 1 h of signing.

The RSL recordings were annotated and analyzed by the author. Glossing was done with the help of two native signers of RSL. The personal stories from the NGT corpus had already been glossed by the Corpus NGT team (including only sign-by-sign glossing). The *Canary Row* stories in NGT were glossed by the author with the help of one native signer of NGT. After having glossed the texts, they were annotated in ELAN (Wittenburg et al., 2006; Crasborn and Sloetjes, 2008) on multiple tiers, including tiers for topics, activation status, and tiers for non-manual markers such as eyebrow raise (Fig. 1).
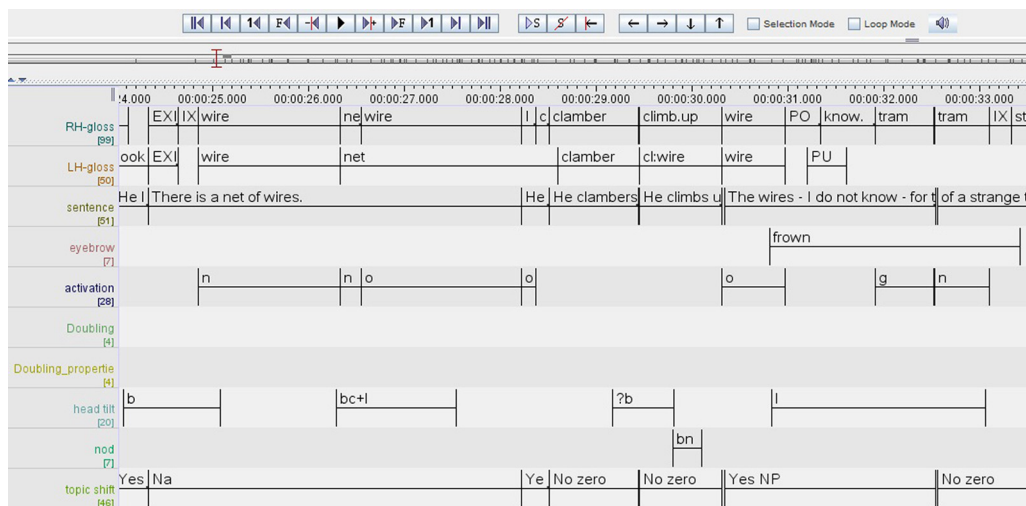

Fig. 1. Snapshot of an ELAN annotation including glosses for signs, activation, and non-manuals.

2.2. Participants

The NGT data consisted of signed texts from 15 signers mainly from the Amsterdam region. Five of the signers had been exposed to NGT from birth, and nine of the remaining ten signers had started learning NGT before the age of five years. The mean age of signers is 53, ranging from 17 to 81 years.

For the RSL dataset, data from six signers were collected. The mean age of the signers at the time of recording was 45 years, and the range was from 30 to 58 years. All signers are deaf and have deaf relatives. Five of the six signers can be classified as native signers. They all come from Moscow and have always lived and worked in Moscow.

The group of NGT signers is thus larger and more varied in their sociolinguistic background than the group of RSL signers. In addition, less information is available about the NGT signers: the presence of deaf or hard of hearing relatives is only known for RSL signers. Due to the difficulty of collecting corpus data, it was impossible to make the RSL dataset fully comparable to the NGT dataset in terms of sociolinguistic characteristics of the signers. Although we are not going to use sociolinguistic information in the further analysis, we have to note that some of the differences between languages might be attributable to the differences in language background of the signers.

2.3. Identifying topics

Topic is a notion that has not received an exact and commonly agreed upon definition. Therefore, it is necessary to explicitly state the procedure of topic identification used in this paper. This procedure is very similar to the one applied to HKSL by Sze (2008).

We distinguish two kinds of topics: 'aboutness' topics and 'scene-setting' topics (Sze, 2008). Aboutness topic is what the sentence is about (Reinhart, 1982). Most typically aboutness topics are noun phrases (arguments of the verb), and basically the sentence adds information about the referent of these noun phrases. Scene-setting topics are time or place descriptions that set the scene for the event described by the sentence. Not all researchers agree that scene-setting topics are in fact topics, and thus use a different term, namely "frame setters" (Krifka, 2008).[3] However, as the data from HKSL (Sze, 2008) and also from RSL and NGT show (section 3), sign languages provide an argument for the existence of a general category of topics, further divided into aboutness and scene-setting topics.

Some researchers (Reinhart, 1982) argued that aboutness topics have to be specific information (known to the speaker), while other researchers allowed for new non-specific aboutness topics as well (Lambrecht, 1994; Gundel, 1988). Even if new non-specific topics exist, old/given topics are clearly the basic type of topics, and this characteristic can be used in the topic identification. Moreover, it is known that subjects are the most common topics (Gundel, 1988).

As for aboutness topics, in this study, functionally prototypical topics, namely subjects that are old information, were identified, based on the content and context of the sentences (so whether the sentence could be analyzed as being *about* the argument based on the context). However, in sentences where the object was old information and the subject was new information, the object was analyzed as the topic (following Sze, 2008). Sentences judged as presentational/thetic based on context were excluded. Having established means for the identification of prototypical topics, it was possible to turn to the formal side, namely to topic marking. All sentences with potential topics were annotated with respect to word order, non-manual markers accompanying the topics and other prosodic markers.

Prosodic boundaries, following Nespor and Sandler (1999), have been defined as either a pause in signing (which can be realized as inactivity of the hands, or a manual hold, or extra repetition of the last sign within a prosodic constituent) or a change in non-manual behavior. Thus, a non-manually marked topic is automatically prosodically marked, but a prosodic boundary between the topic and the rest was also registered when the rest of the sentence, but not the topic, was marked non-manually.

Based on the established markers of prototypical topics (which also confirmed previous findings on NGT, and the limited findings for RSL), it was also possible to analyze more complex situations: for instance, when both the subject and the object constitute old information in a sentence, but the object is fronted and/or marked by eyebrow raise, we analyze the object as the only topic.[4,5] In addition, once the topic markers were identified, some marked non-argument aboutness topics, such as possessor topics, (which were also judged to be topical based on the context) were found as well.

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[3] Other scene-setting topics or frame setters, describing dimensions of evaluation of the proposition, are also possible, such as healthwise, spiritually etc. (Krifka, 2008). We suspect that such frame setters would be also marked as scene-setting topics in RSL and NGT, but our corpora do not provide the relevant examples.

[4] The possibility cannot be ruled out that fronting of an object can mark some other function, such as focus. Note however, that new information objects are not fronted in our data, so this interpretation is unlikely.

[5] In sentences where both the subject and the object were old information and not marked in any clear way (or one of the arguments was elided), subjects were considered topics, as this is typologically common (Gundel, 1988). Note however, that for the identification of topic marking such cases are irrelevant.

In addition, there remains the issue of zero topics. Many of the sentences do not contain any overt arguments. It is reasonable to assume that some of such omitted arguments are topics, but since they are not expressed, no further analysis of such sentences is possible.

For scene-setting topics, the situation is also complicated. It is known that scene-setting topics can be (and very often are) new information. The only clue that can be used to identify scene-setting topics is their meaning: they are time or place descriptions. Yet it is also clear that not all time and place descriptions are scene-setting topics – otherwise the definition would be vacuous.

A procedure similar to that used for the identification of aboutness topics was applied to scene-setting topics. All place and time descriptions were marked as scene-setting topics in the first round of annotation. In a second step, syntactic, non-manual, and other prosodic markers of these topics were identified.

3. Topic marking

In this section, we discuss topic marking in RSL and NGT. Section 3.1 is devoted to syntactic marker of topics; section 3.2 discusses non-manual markers of topics; section 3.3 elaborates on the prosodic boundaries which can mark topics as well. In addition, in section 3.4 we discuss unmarked topics.

Our RSL dataset contains 1612 sentences which could (judging by the context) potentially have an aboutness topic. In 564 (35%) of them, there is an overt topic. From our NGT dataset, we extracted 1488 sentences which could potentially have an aboutness topic. Only 38% (571) of them have an overt topic. Many sentences do not have any overt arguments, which suggests that the topical argument has been elided (1).[6] Ellipsis is not a marker of topic per se; instead, it correlates with topichood because topics are typically given, and ellipsis demands givenness. In what follows, we discuss overt topics only.

(1) a.   LOOK   [RSL]
         '[The cat] looks.'
     b.   GO.DOWN   [NGT]
         '[The cat] goes down.'

In RSL only 49% (279) of the overt topics are marked prosodically (which includes marking by eyebrow raise, head tilt, and/or a prosodic break). In NGT, only 50% (287) of the overt topics are marked prosodically.

Overt time or place descriptions can be found in 124 sentences in RSL, and in 96 sentences in NGT. In RSL, 65% of these topics are prosodically marked, and in NGT, 79% of these topics are marked.

3.1. Syntactic markers

RSL and NGT have a variety of manual syntactic strategies to mark topics, including word order (section 3.1.1) and topic copying (section 3.1.2). Some additional potential markers of topics which are left out from this paper are discussed in Kimmelman (2014).[7]

3.1.1. Word order

Both aboutness (2) and scene-setting topics (3) are placed clause-initially. Although there are very few examples of sentences containing both a marked scene-setting ('sst') and a marked aboutness topic ('top'), it is still possible to argue that the general order in such cases is [Scene-Setting – Aboutness – The rest] as in (4):

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[6] **Glossing conventions**: Glosses in SMALL.CAPS are approximate translation of signs. If two English words are used to gloss one sign, the words are separated by a point: LOWER.BINOCULARS. IX stands for index (pointing sign); -1, -2 and -3 are person markers (on verbs or pronouns). PU is a palm-up sign. The slash (/) represents a prosodic boundary. 'Top' stands for aboutness topic, 'sst' for scene-setting topic. Above the glossing line, non-manual markers are specified, and their scope is reflected by the underline: bht – backward head tilt; er – eyebrow raise. The glossing is by necessity partial, because detailed glossing of all examples would require too much space.

[7] These markers are the PU sign which occasionally follows the topic, and the syntactic strategy whereby a non-manually marked topic is preceded by an non-manually unmarked pointing sign. Both strategies are quite rare.

$$\overline{\text{er+bht}}$$

(2)   IX-3 CAT   IX-3 THINK   [RSL]

  'The cat thinks.'

$$\overline{\text{er}}$$

(3)   IX-3 WALL   WATER PIPE   [RSL]

  'There is a waterpipe on the wall.'

$$\overline{\text{bht}}$$

(4)   a.   [THEN]$_{sst}$ / [IX-3]$_{top}$ / GO   [NGT]

     'Then he goes away.'

$$\overline{\text{bht}}$$

     b.   [FOURTH]$_{sst}$ /[IX-3 CAT]$_{top}$ / LOOK   [RSL]

       'In the fourth story the cat looks.'

As expected, most of the non-manually marked aboutness topics are subjects[8] (4), so it is difficult to determine whether their clause-initial position is different from the subject position, given that in the unmarked word order subjects are preverbal both in RSL and in NGT (Kimmelman, 2012; Coerts, 1994). However, there are several arguments in favor of the presence of elaborate syntactic marking of topics as well. Firstly, non-subject topics (although scarce) are present both in RSL and NGT; for instance, in (5) and (6) the objects (first person pronoun in both cases) are syntactically marked as topics.[9] The fact that the objects are topics in these cases is also clear from context, and from the non-manual markers that accompany them; in addition, in (6) the subject is new information, so it is an unlikely topic.

$$\overline{\text{er}}$$

(5)   IX-1 /   IX-3 LOOK-1   [NGT]

  'They look at me.'

$$\overline{\text{bht}}$$

(6)   IX-1 /   SOMETHING STING BITE   [RSL]

  'Something bit me.'

Secondly, sometimes aboutness topics precede marked or unmarked scene-setting topics, as in (7), where the aboutness topic CATprecedes the prosodically marked scene-setting topic NOW. Previous research (Kimmelman, 2012) has shown that in RSL scene-setting topics (also unmarked ones) tend to precede the subjects. Hence, it is possible to argue that the sentence-initial position of aboutness topics is marked in these cases. Finally, in all the sentences that were analyzed as containing a marked aboutness topic, the topics were also marked prosodically: there was always a prosodic boundary between the topic and the rest of the sentence. Normally, subjects are not separated from the rest of the sentence by a prosodic break, so this break can be interpreted as signaling a syntactic difference between a topic and a subject, assuming that prosody can be used as a criterion for syntactic boundaries.

(7)   CAT / NOW / CLOTHES HAT   [NGT]
     'Now the cat is wearing new clothes and a hat.'

It is also interesting to note that sometimes a topic is accompanied by a resumptive pronoun within the comment, as in (8) and (9), which again contain a first person pronoun topic IX-1. In such sentences, it is clear that the topic and the subject positions are different.

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[8] Note that the notion of subject is necessary independently of the notion of topic, as for instance subjects control verbal agreement and reflexivization, whether they are topical or not.

[9] Potentially topical objects that are not fronted are never marked non-manually, so, following our procedure of topic identification, they are never marked topics.

<u> bht</u>

(8)   **IX-1** /   INSIDE **IX-1** FUNNY LAUGH   [RSL]

      'I am laughing inside.'

    <u> bht</u>

(9)   **IX-1** PU /   **IX-1** LOOK.AROUND   [NGT]

      'I look around.'

Thus, we have provided several arguments that the sentence-initial position is used for topics, and not just for subjects. However, there still remain many cases (approximately 50%), where the potential topic is the subject and it is not marked prosodically. In these cases, it is impossible to tell whether the topic is marked syntactically, as there is no evidence for such marking.

3.1.2. Topic copying

NGT has another strategy of topic marking, namely topic copying: a pronoun referring back to the sentence topic appears in sentence-final position (10). A similar phenomenon has been described for other sign languages, commonly in terms of ''subject pronoun copy'' (see Padden, 1988 for ASL, and Bos, 1995 for NGT). However, Crasborn et al. (2009) demonstrate that in NGT the sentence-final pronoun does not necessarily refer back to the subject, but can refer to the topic instead, be it a subject or object, or a scene-setting topic. The present study confirms the existence of this strategy for NGT based on corpus data. In the small dataset of NGT analyzed here, clause-final pronouns can refer back to both aboutness and scene-setting topics. In RSL no such strategy could be attested (at least based on the data available to us).

(10)   [IX-1]$_{top}$ DARE [IX-1]$_{top}$ [NGT]
      'I dare.'

Note that the clause-final pronoun in (10) is not a resumptive pronoun as was argued for (8) and (9). The post-verbal position of the clause-final pronoun is clearly different from the canonical pre-verbal position of a subject pronoun.

In Kimmelman (2014), we argue that topic copying in NGT is a manifestation of a general phenomenon of doubling and that the function of topic copying is pragmatic: it is used to foreground an important topic that will be reused in the subsequent discourse.

3.2. Non-manual prosodic marking

Both in RSL and in NGT, topics can be marked by raised eyebrows and/or backward head tilt. For NGT, this confirms previous findings reported by Coerts (1992) and Crasborn et al. (2009). These markers are discussed in the following two sections. In section 3.2.3 we discuss how topic shift is related to non-manual markers of topics.

Note that although neither eyebrow raise, nor backward head tilt are very frequently used to mark topics, we still analyze them as topic marking, because they have no other apparent function in the sentences analyzed. Subjects which are not potential topics (new information subjects for instance), are never marked this way, while topical objects are (see (6)). Although these markers have other functions, including marking questions or expressing emotions (see Kimmelman (2014) for further discussion), none of these functions seems to be applicable to the examples we discuss below.[10]

3.2.1. Eyebrow raise

Topics of different types can be marked by eyebrow movements in both RSL and NGT (see Fig. 2 for an illustration). In the RSL data, 60 instances of topics marked with eyebrow raise have been found, while 98 such cases occurred in the NGT data. In RSL as well as NGT, both aboutness and scene-setting topics are marked by eyebrow movement. Thirty-one aboutness topics are marked this way in RSL (11% of all marked aboutness topics), and 67 topics in NGT (23% of all marked aboutness topics). In addition, 25 scene-setting topics in RSL (31% of all marked scene-setting topics) and 31 (41%) in NGT are marked. For example, in (11) the aboutness topics CAT and CANARY are marked by eyebrow raise, while in (12) the scene-setting topics WALL and IX-3 ('there') are marked. This finding is in contrast to HKSL, where only the scene-setting topics are consistently marked with eyebrow movements (Sze, 2008).

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[10] It might still be the case that non-manual markers of topic serve some other functions, as clearly not all topics are marked, although it is not clear for now what this function might be. Nevertheless, only topical constituents are marked this way, so whatever the non-manual markers express, they are topic-sensitive.
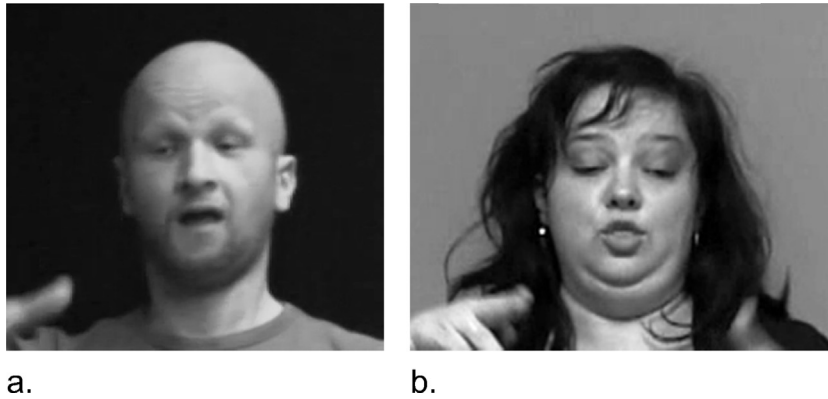
Fig. 2. Eyebrow raise in NGT (a) and RSL (b).

<div style="text-align:center">er+bht</div>

(11) a. IX-3 CAT   IX-3 THINK   [RSL]

         'The cat thinks.'

<div style="text-align:center">er</div>

  b. IX-3   CANARY   TURN   [NGT]

         'The canary turns.'

<div style="text-align:center">er</div>

(12) a. IX-3 WALL   WATER PIPE   [RSL]

          'There is a waterpipe on the wall.'

<div style="text-align:center">er</div>

  b. IX-3(WIRE)   NOB NOB   [NGT]

         'There are nobs on the wire.'

The fact that aboutness topics and scene-setting topics can both be marked with eyebrow movement suggests that they should be seen as examples of a more general category of topics.

3.2.2. Backward head tilt

Both scene-setting and aboutness topics can be marked by backward head tilts in RSL and NGT. In the RSL data, there were 30 aboutness (11% of all marked aboutness topics) and 5 scene-setting topics (6% of all marked scene-setting topics) marked by backward head tilt, and in the NGT data we found 36 aboutness (12% of all marked aboutness topics) and 7 scene-setting topics (9%) marked this way. Backward head tilt is depicted in Fig. 3 below. Backward head tilt is sometimes combined with eyebrow raise (11a), but may also occur on its own (8).
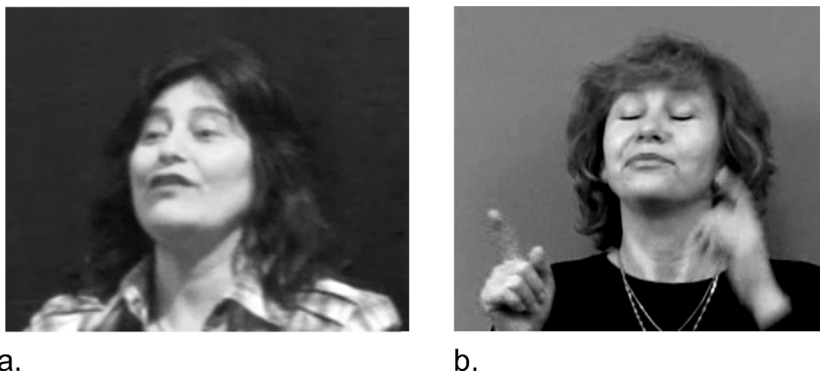

Fig. 3. Backward head tilt in RSL (a) and NGT (b).

Since head tilts accompany aboutness topics and scene-setting topics, exactly as eyebrow movements do, and sometimes co-occur with brow raise, it is possible to analyze the two markers as realizations of the same feature. In a study on focus marking in NGT, Crasborn and van der Kooij (2013) suggest that three non-manual markers, namely eyebrow raise, backward head tilt and wide eyes are all realizations of the same underlying prosodic feature [open up!]. This is parallel to phonological features in spoken languages that can have different phonetic realizations. The rules that govern the choice of the realization are unclear so far, but it is obvious that the same meaning (focus in Crasborn and van der Kooij's (2013) analysis) can be expressed in different ways. The findings of this study confirm this for non-manual topic marking in NGT, and indicate that this is true for RSL as well.

3.2.3. Topic shift and non-manual markers

Previous research on spoken languages (Brunetti, 2009) has shown that topic shift, that is, a change in topics between consecutive sentences, can influence topic marking. In particular, topics are expected to be more marked in sentences with topic shift. This manifests itself in the fact that shifted topics are more often overt, while non-shifted topics often have zero expression; furthermore, shifted topics are likely to be more marked syntactically and intonationally. Janzen (2007) found that non-manual markers in ASL marked shifted topics. Given these typological observations, we decided to check whether topic shift in RSL and NGT correlates with topic marking.

If we look at aboutness topics that are marked with eyebrow raise and/or head tilt, it becomes clear that topic shift is indeed one of the reasons to mark topics. All aboutness topics that are marked with eyebrow movement are observed when topic shift occurs. In the case of scene-setting topics, there is no sense in speaking of topic shift, as overt scene-setting topics are almost always "shifted", in the sense that they signal a new place or time specification. Therefore, it remains unclear why only some scene-setting topics are marked non-manually.

However, it is not true that all shifted topics are marked with eyebrow movements. It is easy to find examples that lack eyebrow movement, such as IX-1 in (13a) and (13b). In fact, in the Canary Row stories in RSL 26% of all shifted topics are marked non-manually, while in NGT – 37% of such topics are marked.

(13) a.   WOOD A.LOT WOOD. IX-1 SIGN   [NGT]
            'There was a wood with a lot of trees. I signed.'
      b.   FUNNY. RIGHT. AIRPORT / IX-1 THINK   [RSL]
            'It was funny. Right. In the airport I think…'

If we look at topics that are not marked non-manually, but are separated by a prosodic boundary from the rest of the sentence (see the following section), it becomes clear that they show properties different from the non-manually marked topics. It appears that the former are not all shifted topics (see example (14) in the next section).

3.3. Prosodic boundaries

In most sign languages, topics (whether they are marked non-manually or not) are usually separated from the rest of the sentence by a prosodic boundary (see Sze, 2011 for an overview). One way that a prosodic boundary can be realized in a sign language is a pause (which might be either a perceivable manual hold or additional repetitions of the last sign, or a perceivable period of inactivity of the hands); another way of identifying a prosodic boundary is when there is a change in non-manuals (Nespor and Sandler, 1999). This means that if a topic is marked by, for instance, eyebrow raise, while the rest of the sentence is not, there is automatically a prosodic boundary after the topic. The remaining question is whether topics can be marked by a prosodic boundary in the absence of non-manual marking on the topic.

The data reveal that topics indeed can be marked by prosodic boundaries (mainly by a pause). In both examples in (14) the topics of the last sentences (IX-1 and IX-3) are not marked by non-manuals, but there is a prosodic boundary following the topic. In (14a) the prosodic boundary occurs because the topic, in contrast to the rest of the sentence, is not marked non-manually. In (14b) the topic is followed by a pause.

                                          _____ er
(14) a.   IX-1 LOOK. LAUGH. **IX-1**   PU CAN.NOT IX-1 EXPLAIN.   [RSL]

            'I look. I laugh. I cannot explain it.'

      b.   IX-3 CAT THINK. (…) IDEA. IX-3 [pause]/ RAIN.PIPE CLIMB.IN   [NGT]

            'The cat thinks. He's got an idea. He climbs in a rain pipe.'

Table 1
Marked and unmarked topics.

		Marked		Unmarked	Total
		Non-manually	Boundaries		
Aboutness	RSL	47 (8%)	232 (41%)	285 (51%)	564[a]
	NGT	89 (15%)	198 (35%)	284 (50%)	571
Scene-setting	RSL	30 (24%)	51 (41%)	44 (35%)	125
	NGT	38 (39.5%)	38 (39.5%)	20 (21%)	96

[a] The total number of sentences with overt aboutness topics.

As for scene-setting topics, they can also be marked prosodically without being non-manually marked. In (15) the scene-setting topic IX-3 ('there') is not marked non-manually, while the rest of the sentence is. It is therefore prosodically separated from the rest of the sentence.

<div style="text-align:center">

____er+bht____

</div>

(15) IX-3 / SAME TRAM.GO [RSL]

'Back there goes the same tram.'

To sum up, topics in RSL and NGT can be marked by prosodic boundaries. In addition, they can be marked by eyebrow raise and/or head tilt. We can conclude that prosodic boundaries are clear markers of topics, while eyebrow raise and head tilt are probably not just topic markers, but rather markers of shifted – or more generally – less accessible topics.

3.4. Prosodically unmarked topics

After having established all the devices to mark topics, it is now possible to provide an overview of how many of the overtly expressed topics are marked in RSL and NGT (Table 1).

In both languages, approximately half of the overt aboutness topics are marked, while the other half is unmarked. Therefore, we can conclude that although prosodic topic marking is quite common, it is definitely optional, and that non-manual marking is not very frequent.

Note, that despite the apparent differences between RSL and NGT in Table 1, it is not appropriate to compare pure numbers of marked topics in our two corpora, because the personal stories are too different content-wise. If we consider only the Canary Row stories, it turns out that RSL has 31 aboutness topics that are marked by eyebrow movement and/or head tilt (out of 90 sentences with marked topics (34%), while NGT has 67 marked topics out of 157 such sentences (42%). The Pearson's chi-squared test shows that this difference is not significant ($\chi^2 = 0.5159$, df = 1, $p = 0.5$). Therefore, at this stage, we cannot conclude that there are reliable differences in the frequency of non-manual marking of topics in RSL vs. NGT.[11]

Scene-setting topics in general are marked prosodically more often than aboutness topics. In RSL, 81 (65%) of the scene-setting topics are marked, and 30 (24% of all scene-setting topics) non-manually, while in NGT 76 (79%) such topics are marked, and 38 (39.5% of all scene-setting topics) non-manually. Note that this is reminiscent of Sze's (2008) findings on HKSL, where scene-setting topics are more regularly marked by non-manuals than aboutness topics.

4. Thetic sentences

In addition to having a topic marking strategy, RSL and NGT both have a separate strategy to mark thetic sentences, that is, sentences containing only new information (Sasse, 1987). It is a syntactic strategy, namely the subject appears in the post-verbal position (the VS order) (16), (17). There is usually no prosodic break between the verb and the subject, and there is never any specific non-manual marking associated with the subject.

(16) COME TRAM [NGT]

'There comes a tram.'

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[11] As the figures in this paragraph show, the majority of non-manually marked topics occur in Canary Row stories, while in the personal stories, they are less common. This difference is due to the fact that topic shift, which is a necessary precondition for the use of non-manual marking, is influenced by the structure of the narrative. In short stories with several prominent characters (Canary Row), topic shift occurs more often. For more details see Kimmelman (2014).

(17)   WINDOW APPEAR CAT   [RSL]
        'There appears a cat in the window.'

The separate strategy to mark thetic sentences is, however, optional. In many cases thetic sentences have the same SV order as sentences with topics. Compare (18) to (19): both sentences express the same proposition 'a telephone rings', but in the former the order is SV, while in the latter it is VS. This means that a sentence with the unmarked word order and without prosodic on the subject, as (18), can be interpreted either as thetic or as categorical. Examples (20–21) from RSL also demonstrate that the VS order is not obligatory in thetic sentences.

(18)   TELEPHONE RING   [NGT]
        'A telephone rings.' (SV)
(19)   IX-A RING TELEPHONE IX-A   [NGT]
        'A telephone rings.' (VS)
(20)   GRANNY COME   [RSL]
        'There comes a granny' (SV, GRANNYnot mentioned or implied before)
(21)   IX MAN STAND   [RSL]
        'There stands a man there' (SV, MANnot mentioned or implied before)

One should also notice that the VS strategy for thetic sentences is much more common in RSL than in NGT: 25 examples from RSL vs. only 6 examples from NGT. This cannot be attributed to the differences in genres, because in RSL 18 examples come from the cartoon stories, and all NGT examples come from the cartoon stories as well, so a direct comparison is possible. The difference might be caused by language contact: the VS order for thetic sentences is also present in Russian (22), while in Dutch postverbal subjects are also possible if some other element is pre-verbal (the well-known V2 property of Dutch), but this strategy is not restricted to thetic sentences. Given the small dataset we cannot to exclude the possibility that the VS order in NGT would be used in non-thetic sentences, too, under the influence of Dutch.

(22)   (What happened?)   [Russian]
        priehal   tramvaj
        came   tram
        'A tram came.'

To sum up, RSL and NGT have an elaborate but optional syntactic strategy of marking thetic sentences. The optionality of this strategy together with the optionality of topic marking (section 3.4) presents a basis for the discussion of topic prominence of RSL and NGT in the following section.

5. Topic prominence

As mentioned in section 1.2, the question of topic prominence[12] of sign languages is a long-standing one. For some sign languages, the literature contains contradictory claims regarding their topic prominence (for instance, compare McIntire, 1982 to Liddell, 1980 for ASL). One of the reasons that the question is difficult to answer is that there is no one accepted definition of topic prominence. Recently a thorough analysis of topic prominence has been conducted for HKSL by Sze (2008). Sze argued based on the theories of topic prominence proposed for spoken languages that HKSL is not topic prominent. We review her arguments in section 5.1 and then apply them to RSL and NGT in section 5.2.

5.1. Defining topic prominence

As mentioned in the introduction, the notion of topic prominence has been first discussed in detail by Li and Thompson (1976). They argued that languages can be classified as topic prominent, if the basic structure of the sentence is Topic-Comment. Basicness means that the Topic-Comment structure is not derived from other structures (such as Subject-Predicate); however, note that the notion of deriving one structure from another is very theory-dependent and thus difficult to apply. They also identified some characteristics that topic prominent languages have, and these characteristics have been used to identify topic prominent languages in later studies.

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[12] Note that the notion of subject prominence is orthogonal to topic prominence, as according to Li and Thompson (1976), languages can be topic prominent, subject prominent, both, or neither. We do not address the question whether RSL and NGT are subject prominent in this paper.

Sze (2008) has thoroughly analyzed the criteria that can be used to identify topic prominent languages suggested by Li and Thompson (1976), based on typological data from spoken languages. She convincingly argues that the proposed properties of topic prominent languages are not all valid. In particular, the lack of passive is not a good criterion because many Indo-European languages are subject-prominent but only have marginal passives. She reversed the argument claiming that if passives are widespread then the language is probably subject-prominent. The same can be said about the presence of dummy-subjects: many subject-prominent languages lack them, but only subject-prominent languages have them. She also gave counterexamples to the claim that topic prominent languages are mostly SOV. She further argued that double-subject constructions (when the topic has no syntactic relation to the sentence) are present in subject-prominent languages as well, so only prevalence of such constructions can be a sign of topic prominence. She concludes that the only reliable features of topic prominent languages are prevalence of the double-subject construction, obligatoriness/high frequency of surface coding of topics, and lack of constraints on what can become topics. Sze also added a criterion from Kiss (1995) namely that in topic prominent languages there is an obligatory syntactic distinction between thetic and categorical sentences.

She then applied these to HKSL and came to the conclusion that HKSL is not a topic prominent language, neither according to criteria from Li and Thompson (1976), not according to the criterion from Kiss (1995). Note that the latter finding is quite surprising in light of the fact that Kiss (1997) found out that, according to her definition, almost all European languages, including English, are topic prominent.[13] This conclusion therefore casts some doubt on the validity of this criterion.

5.2. Topic prominence in RSL and NGT

If we apply Sze's criteria (2008) to RSL and NGT, it becomes clear that these languages cannot be considered topic prominent. To begin with, RSL and NGT do not have dummy subjects (or at least, they have not been reported yet); not enough research has been done on passives but the overall impression is that passives are present but quite marginal. However, we agree with Sze that these criteria cannot be used to identify topic prominent languages.

Turning to the important criteria, formulated by Kiss (1995), RSL and NGT do have a separate strategy to mark thetic sentences. However, examples above show that thetic sentences can also use the unmarked word order.[14] A thetic sentence can never have an argument marked prosodically or non-manually as a topic, but this does not seem to be relevant for the Kiss's criterion.

Furthermore, both RSL and NGT have syntactic and prosodic markers of topics. NGT in addition has a strategy of topic copying. However, topic marking is optional; in the case on non-manual markers, it is also not very frequent, and restricted to shifted topics. Therefore, this criterion of basicness of the Topic-Comment structure does not apply either.

Double-subject constructions are in principle possible in both languages. For instance, in (23) the topic IX-1 is a possessor of the subject IX-3 HUSBAND, so it is not an argument of the main predicate.

      <u>   er   </u>

(23)   [IX-1]$_{top}$ IX-3 HUSBAND CALM   [RSL]

       'As for me, [my] husband is calm.'

However, such constructions are not frequent, unless scene-setting topics are analyzed as double-subject constructions. Sze (2008) did not analyze them as such for HKSL, while Jantunen (2007) did for FinSL. This criterion, if used as Sze (2008) applies it, does not show that RSL and NGT are topic prominent either.

Finally, topics appear to be restricted in RSL and NGT. Firstly, we have seen that mostly shifted topics are marked (and only shifted topics are marked by eyebrow raise and head tilts), so there is a functional/semantic restriction. Secondly, in the data pool aboutness topics are mostly noun phrases. In addition, there are several examples in RSL with VP or V-topics. For instance, in (24) the topic is the verb phrase IX-3 SIT 'sits there', while the comment is GRANNY. This should not be confused with thetic sentences with the VS order, because the subject GRANNY here is old information, and the VP-topic is

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[13] According to Kiss (1997), in most European languages, including Indo-European (Slavic, English, Dutch, Greek, Italian) and non-Indo-European (Hungarian, Finnish, Basque, Mingrelian), the subjects remain within the Predicate Phrase in thetic sentences, while they obligatorily leave the Predicate Phrase in categorical sentences.

[14] Note, however, that there might be some tests which would show that the syntactic position of subjects in thetic sentences is different from the syntactic position of subjects in categorical sentences. Kiss (1997) demonstrated this for English, arguing for its topic prominence. However, based on corpus data we are only able to assess that the surface SV order is used for both types of sentences.

Topic prominent   Not topic prominent

Lisu   Chinese   NGT, RSL   HKSL

←──→

Fig. 4. Non-manual markers of focus in sign languages. HKSL is less prominent than RSL or NGT, because it lacks a special marking of thetic sentences.

new and marked as a topic with eyebrow raise. Such examples have not been found in the NGT dataset, but given the low frequency of this phenomenon in the RSL dataset, it is not possible to claim that NGT does not allow this construction.

$$\underline{\qquad \text{er}\qquad}$$

(24)   IX-3 SIT /   GRANNY   [RSL]

        'The granny sits there.'

HKSL is similar to RSL and NGT with respect to the topic prominence criteria, with one exception: it does not have a separate strategy for thetic sentences at all. So in this respect RSL and NGT have a more elaborate system of marking of Information Structure; this system, however, is not obligatory.

To sum up, according to the criteria from Sze (2008), RSL and NGT are not topic prominent. We could, however, question the criteria Sze used. Her main criterion is based on the definition of topic prominent languages from Kiss (1995); however, in this definition almost all European languages are topic prominent, while HKSL, RSL, and NGT are not, although these sign languages have specialized overt topic markers.

On possible solution is offered in Surányi (in press), who suggests making further distinctions between different types of discourse configurationality (which subsumes the notions of topic and focus prominence). Among other notions, he distinguishes between strongly and weakly discourse-configurational language: in the former, topics and/or foci must be syntactically marked, while in the latter there are special syntactic positions that are only used to mark information structural notions, but these notions are marked optionally.

If we accept this classification of topic prominence, RSL and NGT can only be called weakly topic prominent because, although they have dedicated topic positions (and a special construction for thetic sentences), topics only optionally appear in these positions. HKSL under this analysis would be weakly topic prominent as well, but probably even weaker than RSL and NGT, because it lacks special marking of thetic sentences. This implies that topic prominence can be a scale rather than a categorical distinction. Fig. 4 is a visualization of this suggested scale.

Note that already Li and Thompson (1976) argued that topic prominence is a scale, and that for instance Lisu is more topic prominent than Chinese, but both are more topic prominent than English. However, the question remains whether such a definition of topic prominence is theoretically interesting, that is, if it predicts some grammatical properties of more vs. less topic prominent languages, including sign languages. Sze (2008) has shown that many of the Li and Thompson's properties of topic prominent languages do not hold. She also argued that topic prominence can be considered an umbrella term grouping together languages showing different grammatical characteristics. Kiss (1997) has shown that most European languages are topic prominent according to her definition, while they are quite diverse typologically, which undermines the validity of this notion as well. Surányi (in press) discussed the possibility that topic prominence can be a result of interaction of several smaller parameters. The question of usefulness of the notion of topic prominence thus awaits further research.

6. Summary

In this paper we have described topic marking in RSL and NGT and discussed whether they can be considered topic prominent.

The formal markers of aboutness and scene setting topics in RSL are sentence-initial position of the topics, a prosodic break following the topic, and non-manual markers, including eyebrow raise and backward head tilt. In NGT all these markers are used, but sometimes topics are also marked by clause-final pointing signs referring back to the topic of the sentence (sentence-final topic copying); this was not evidenced in RSL.

Topics in RSL and NGT are not marked obligatorily. Eyebrow raise and head tilt only mark shifted aboutness topics. In both RSL and NGT the VS order is used in thetic sentences. However, this strategy is optional, so the SV order is also accepted in thetic sentences.

We have observed that despite RSL and NGT being unrelated and having no or little contact with each other, Information Structure is expressed in a very similar way in the two languages. Both languages mark topics (and use the same formal markers, but this is also true for many other sign languages, see Sze (2011)), and both have a syntactic

strategy to express thetic sentences. However, there are also some differences between the languages. Firstly, NGT (and not RSL) has the phenomenon of sentence-final topic copying. Secondly, although NGT has the VS order strategy for thetic sentences, this strategy is much less frequently used than in RSL.

According to the criteria of topic prominence summarized by Sze (2008), RSL and NGT cannot be considered topic prominent, because despite the fact that they have strategies to mark topics and thetic sentences, this marking is optional. However, based the fact that these languages have topic marking, and an elaborate structure for thetic sentences, we suggest that a binary distinction between topic prominent vs. non-topic prominent languages might be too strict, and a scale of topic prominence should be established. However, one could also question the validity of such a notion altogether.

Acknowledgments

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