

# Doubling in RSL and NGT: a Pragmatic Account\*

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In this paper, doubling in Russian Sign Language and Sign Language of the Netherlands is discussed. In both sign languages different constituents (including verbs, nouns, adjectives, adverbs, and whole clauses) can be doubled. It is shown that doubling in both languages has common functions and exhibits a similar structure, despite some differences. On this basis, a unified pragmatic explanation for many doubling phenomena on both the discourse and the clause-internal levels is provided, namely that the main function of doubling both in RSL and NGT is foregrounding of the doubled information.

*Keywords: Russian Sign Language, Sign Language of the Netherlands, doubling, Information Structure, foregrounding*

## 1 Introduction

Doubling, whereby some constituent occurs twice referring to the same object or action, is commonly attested in many signed and spoken languages. The Russian Sign Language (RSL) examples in (1) and (2) illustrate the phenomenon and also show that the two occurrences of the doubled constituent can be either identical (1) or differ in terms of grammatical markers (2).

- (1) IX GIRL CL:STAND STILL CL:STAND<sup>1</sup> [RSL:x2-6]  
'The girl is still standing'

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<sup>1</sup> Notational conventions: Signs are glossed in SMALL CAPS. Fingerspelled words are represented with dashes: G-R-U-Š-A. IX stands for index (pointing), CL:STAND stands for a classifier construction meaning approximately 'go', ASP — aspectual marking, # — hesitation. Each example from RSL and NGT is followed by a label referring to the text

- (2) CLOSE CL:GO THERE CL:GO-ASP.CONT [RSL:g1-1]  
 ‘There he is going now’ (progressive meaning)

From a theoretical point of view, doubling is a challenging phenomenon because one of the main principles that is said to determine language structure and use is economy. Producing the same constituent twice is obviously uneconomic; linguists therefore always try to find a motivation for this operation that can overrule economy. The functions that have been related to doubling in spoken and signed languages are emphasis, contrastive or non-contrastive verification (Kandybowicz 2007; Corver & Nunes 2007). In addition, doubling can be used to “save” constructions that would otherwise be ungrammatical because of the limitations on the amount of inflection or incorporation.

In this paper, doubling in RSL and Sign Language of the Netherlands (further NGT, for Nederlandse Gebarentaal) is discussed. In both sign languages different constituents (including verbs, nouns, adjectives, adverbs, and whole clauses) can be doubled. I will show that doubling in the two languages has common functions and exhibits similar structure, although there are differences with respect to what kinds of constituents can be doubled. On this basis, I will provide a unified explanation for many doubling phenomena on both the discourse and the clause-internal level, claiming that the main function of doubling both in RSL and NGT is foregrounding of the doubled information. In addition, a possible diachronic relation between discourse doubling and clause-internal doubling in terms of grammaticalization is discussed.

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and the signer: for instance, NGT:4-3 means that this example is from the speech of the signer 3 from text 4.

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## 2 Doubling in Spoken and Signed Languages

Doubling is a phenomenon attested in many spoken and signed languages (Kandybowicz 2007). Sign languages in which doubling has been attested are, among others, American Sign Language (ASL: Fischer & Janis 1990, Nunes & de Quadros 2008), Brazilian Sign Language (LSB: Nunes & de Quadros 2008) and Hong Kong Sign Language (HKSL: Sze 2008).

Several explanations for the doubling phenomenon have been proposed both for signed and spoken languages. Cheng and Vicente (2008) argue that the relation between the occurrences of the doubled element is one of movement, and that double realization of the copies is a strategy to save a derivation that would otherwise crash. Along the same lines, Fischer and Janis (1990) claim that verb doubling in ASL occurs when the verb would otherwise become too heavy, namely when an overt object is present and the verb is inflected or contains a classifier. Similarly, Kegl (1985) discusses limitations on the number of arguments that can be incorporated in the verbal stem in ASL and suggests that in order to incorporate more arguments than would be possible the verb can be doubled, splitting the incorporation burden between the two occurrences.

A different line of reasoning connects doubling to notions of emphasis or affirmation. Based on the theory developed in Nunes (2004), many authors argue that double realization can be triggered when one of the occurrences of the doubled element undergoes morphological fusion with some functional head, such as an emphatic head or a focus head. Doubling in SL has been explained along these lines as well (Nunes & de Quadros 2008).

However, as this paper will show, these traditional explanations for doubling cannot account for the RSL and NGT data. Therefore, an alternative account is proposed. For more detailed discussion of previous research on doubling in sign languages, see Kimmelman (to appear).

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### 3 Methodology

#### 3.1 Types of data

In order to study doubling in RSL and NGT, I have analyzed two small corpora of these sign languages. For RSL, a corpus of narratives collected and annotated by Prozorova (2009) was used. It consists of 13 stories told by 9 signers. Two stories were based on the *The Pear Film* (Chafe 1980), the other 11 stories were based on several comic strips. Nine Deaf<sup>2</sup> signers participated: four men and five women. The average age of the informants at the time of the recording was 31 years. Five subjects came from Deaf families, but the remaining four did not acquire RSL until school (approximately at the age of 6); they also used spoken Russian at home.

For NGT, I have analyzed a small subset of the Corpus NGT (Crasborn, Zwitserlood & Ros 2008; Crasborn & Zwitserlood 2008), namely 3 fables (texts labeled 92, 93, 1058) and 4 sessions of retelling of life events (4, 94, 170, 208). The texts were signed by 9 signers. All signers are deaf and have NGT as their dominant language; they all come from the Amsterdam region. Their average age at the time of recording was 55 years. Given that the NGT texts are spontaneous narratives or retellings of the fables signed by other signers, the corpora of NGT and RSL are not directly comparable. One should also notice that the sociolinguistic characteristics of the NGT signers are different from the characteristics of the RSL signers, which might account for some of the differences between the corpora. Therefore, no direct quantitative comparison will be made between the two languages.

The RSL corpus was annotated by Prozorova (2009) for the purpose of prosodic analysis. She transcribed it using ELAN software with several

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<sup>2</sup> *Deaf* is used to refer to Deafness as a cultural notion as opposed to *deaf* referring to a medical condition.

transcription tiers, including glosses for signs. I have added several tiers necessary for the analysis of doubling, such as one for notions of information structure (topic, focus etc.). The NGT texts contained some glosses created by the Corpus NGT team: a sign-by-sign translation was included. As in the RSL corpus, I have added several extra tiers. The translation of the sentences was done with the help of a native signer.

### 3.2 Defining doubling

If two constituents are used to refer to the same object, action or situation, they were analyzed as doubling. Thus my list of doubling constructions of RSL and NGT contained not only the prototypical cases of verbal doubling, but also doubling of all types of constituents. The purpose of using this definition was to collect as many *potential* instances of doubling as possible and then to classify and analyze them.

I did not consider lexical identity of occurrences to be a necessary condition for doubling. For instance, if two different verbal signs refer to one event they are considered an instance of doubling. I made this decision based on examples from RSL and NGT like the one given in (3a). At first glance, this looks like prototypical verbal doubling, but the two verbs are in fact lexically unrelated: the verb STEAL is a lexical verb with no classifier, while the verb CL:TAKE is a classifier construction; however, both verbs refer to the same action performed by the boy. At the surface, this construction looks very similar to (3b), where a classifier construction is repeated.

- (3) a. STEAL LIPSTICK CL:TAKE [RSL:x1-4]  
       ‘[The boy] stole the lipstick’
- b. BOY CL:TAKE LIPSTICK CL:TAKE [RSL:x2-6]  
       ‘The boy took the lipstick’

Because lexical identity at the word level is not considered necessary, I also did not consider identity a necessary criterion in the cases of clause doubling. For a more prolonged discussion of methodology see Kimmelman (to appear). As a result, the RSL data pool contains 79 instances of doubling, while the NGT data pool contains instances of doubling.

## 4 Data

In this section the properties of doubling in RSL and NGT are presented. First I briefly discuss doubling of the form X X due to speech errors or hesitation and doubling for clarification/elaboration (section 4.1), and then doubling of the form X Y X, which is the most important type of doubling for the present paper (section 4.2). After that, some properties of the occurrences of doubled constituents are considered, namely morphological and quantitative differences between the occurrences.

### 4.1 The X X and X X' models

Just as in spoken languages, doubling may occur in both sign languages when the signer hesitates or makes a speech error and corrects herself. Hesitation can result in doubling because it gives the signer time to think and plan the further discourse while repeating the sign. This kind of repetition usually involves the X X model, with several consecutive repetitions of the sign (4). A speech error is another cause for doubling, when the erroneous sign is repeated in the correct form.

- (4) NOT.FAR CL:GO IX CL:GO IX BOY# BOY [RSL:g1-1]  
 ‘Not far [from there] goes a boy... a boy.’

Another common type of doubling can be described by the scheme X X'. In this type, the second occurrence of the sign appears immediately after the first one but usually the second occurrence is different from the first because it clarifies or specifies the first occurrence. One phenomenon that is common in RSL but is not used in the NGT data is fingerspelling of the sign. The sign is first produced in its lexical form, then it is fingerspelled, and sometimes repeated again in the lexical form. In (5) the sign SNOWBALL is clarified by fingerspelling the Russian word *snežok* 'snowball'.

- (5) BOY OTHER BOY CL:THROW SNOWBALL S-N-E-Ž-O-K CL:THROW [RSL:z3-7]  
'Another boy threw a snowball'

It is clear that these two types of doubling are not regulated by the grammars of RSL and NGT but result from processing factors. For the sake of space, these models are not discussed in any detail here.

## 4.2 The X Y X model of doubling

The type of doubling which appears most frequently in both our RSL and NGT data — and which is actually the type most frequently discussed for other SLs — follows the X Y X model, where the occurrences of the doubled constituent are separated by some constituent (or constituents). The RSL corpus contains 46 such cases (58% of all cases of doubling), and the NGT corpus 97 cases (71%).

### 4.2.1 Clause-internal doubling

When doubling of the X Y X type occurs clause-internally, it is usually the predicate that is doubled, while some dependent constituent separates the two occurrences — be it an object (6), a subject, or an adjunct<sup>3</sup>.

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<sup>3</sup> It might be useful for the reader to know that the unmarked word order in both RSL and NGT (in the Amsterdam region) is SVO for verbs and SOV for classifier predicates.

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- (6) a. LOOK PEAR LOOK [RSL:g2-2]  
       ‘He looks at the pears’
- b. 1 BRING SCHOOL BRING [NGT:170-9]  
       ‘At 1 I brought her back to school’

In both sign languages, nouns can be doubled with an adjective appearing in between, and *wh*-words may be doubled in clause-initial and clause-final position. Modal verbs can also be doubled in RSL, with the rest of the clause being placed in between the two occurrences. There are also a few instances of doubling both in RSL and NGT where the doubled element is a modifier of a constituent, be it an adjective or an adverb.

In addition, in NGT yet another kind of doubling exists, namely topic copying (Crasborn, van der Kooij, Ros & de Hoop 2009 call it “topic agreement”). According to the literature, many sentences in NGT, ASL and HKSL contain a pronoun in the final position referring back to the topic of the sentence (7). The topic itself can be either pronominal or a full NP, and both situations can be analyzed as doubling, but in the corpus I used only the former type of situation occurred, so in all instances of topic doubling a pronoun was doubled.

- (7) IX-1 STILL IX-1 [NGT:94-1]  
       ‘I’m still’

Topic copying in NGT occurs rather often. My corpus includes 39 instances of topic copying (29% of all doubling in NGT). In the RSL corpus this phenomenon does not occur. Although the corpus is small, it is unlikely that the absence of this phenomenon is accidental. Rather, I take it to suggest that this

kind of doubling does not occur in RSL or is very rare. However, this should be checked in future work.

### 4.2.2 Clause doubling

Both in RSL and NGT, clauses can be doubled, and sometimes the occurrences of the clauses are separated by another clause (8). Thus, clause doubling can be said to occur in accordance with the X Y X model. This phenomenon is relatively common both in RSL and NGT. In RSL we found 8 instances of clause-doubling by this model (10% out of all instances of doubling) and in NGT 9 instances (7%).

- (8) a. CL:FALL. HAT CL:FLY.AWAY. CL:FALL [RSL:g2-2]  
       ‘He fell and his hat flew away’
- b. BE.STARTLED. SCREAM. BE.STARTLED [NGT:4-2]  
       ‘He is afraid and he cries’

## 4.3 Identical and modified copies

### 4.3.1 Identical doubling

The occurrences of the doubled constituent can be either identical or differ morphologically. In the RSL corpus, in 33 of 46 instances of X Y X doubling (71% out of all instances of doubling) the two occurrences were identical. In the NGT corpus, 83 cases out of a total of 97 (85%) were identical. These cases involved various types of doubled elements: verbs (including modal verbs), adverbs, nouns, adjectives, and clauses. As for topic doubling, I only found identical copies of pointing signs in NGT. It is difficult to imagine how indexical signs referring to the same referent can be non-identical.

### 4.3.2 Non-identical doubling

In the remaining cases of the X Y X model, the occurrences were not identical (13 cases including verb, clause, and adjective doubling in RSL and 14 cases in NGT). In the case of clause-internal doubling, the second occurrence is usually more marked or more specific in meaning. As for non-identical verbs, in two cases in RSL the second occurrence of the verb was marked with a meaningful (emotional) non-manual expression. In three cases in RSL the occurrences of a doubled classifier construction differed in the shape of the movement: the second occurrence contained a more iconic, detailed movement. In several cases in RSL and NGT, the second occurrence of a verb carried aspectual inflection such as the progressive (9). Sometimes the second occurrence was marked with a distributive marker.

- (9) a. CLOSE CL:GO THERE CL:GO-ASP.CONT [RSL:g1-1]  
       ‘There he is going now’ (progressive meaning)
- b. LOOK IX WINDOW IX PLANE IX LOOK-ASP.CONT [NGT:4-1]  
       ‘He is looking out of the window’

Looking at non-verbal signs, the two occurrences of a sign can also differ in some phonological aspect such as location or movement. Sometimes the occurrences of the signs are different synonymous lexemes, as is true for the two signs meaning ‘whole’ in (10). In this case, it is not possible to tell whether one lexeme is more marked than the other. The signs in (10) are of equal length.

- (10) WHOLE1 BOY WHOLE2 DIRTY [RSL:z3-7]  
       ‘The boy is all dirty’

When clause doubling occurs, the second clause can contain a different number of overtly expressed arguments. Usually, the second clause contains fewer arguments than the first one (11).

- (11) BOY CRY. CL:FALL. CRY [RSL:x2-6]  
'The boy cries because he has fallen'

### 4.3.3 Phonetic differences

If we look only at doubling involving identical occurrences, the copies are still not always completely identical, because in many cases one of the occurrences is shorter and weaker in articulation than the other. Thus, one of the occurrences is made in the dictionary form (that is, in the location and with the handshape lexically specified for this sign) and with normal length, while the other can be articulated at a lower location, with shorter movement, or laxer handshape, and it can also be shorter in duration. In both sign languages, the first occurrence of the doubled constituent is usually longer and more strongly articulated than the second one. When clauses are doubled, the second occurrence is also usually shorter. Moreover, the fact that arguments are overtly expressed in the first clause but not in the second may be an instantiation of the same phenomenon at the clause level.

## 5 Analysis

In this section, I attempt to answer the question why doubling (built by the X Y X model) occurs in RSL and NGT. More specifically, I want to uncover the function of doubling in these languages, as this function can be the motivation for doubling. First, possible morphosyntactic motivations for doubling previously offered on the basis of sign languages are discussed. Then, emphasis as one of the functions of doubling is considered. Finally, based on the insights

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from Shamaro (2008), I offer a pragmatic explanation of doubling in RSL and NGT.

### **5.1 Morphosyntactic motivation**

As discussed in section 2, for some of the doubling phenomena, morphosyntactic explanations have been offered. For instance, doubling can occur when the predicate is “too heavy”, in other words, when it is marked for aspect or contains a classifier and also an object of the verb is present (Fischer & Janis 1990) or it can result from limitations on argument incorporation (Kegl 1985).

As Shamaro (2008) has shown for RSL (the same arguments can be made for NGT), these explanations are not relevant when the occurrences of the doubled element are identical, because in this case the two occurrences do not differ in heaviness and neither of them incorporates less arguments than the other. Recall that most instances of doubling in RSL and NGT involve identical doubling. Moreover, the verb that is doubled is sometimes not inflected or does not contain a classifier at all. In addition, these explanations only apply to verbs; however, not only verbs can be doubled, but all kinds of elements including clauses.

### **5.2 Emphasis and doubling**

In both signed and spoken languages, doubling can be used to express emphasis. In RSL and NGT, we find some examples that seem to involve emphasis on the doubled constituent, so for these examples an analysis in the spirit of Nunes and de Quadros (2008) could be offered. I suggest that emphasis can be a motivation for doubling of modal verbs in RSL (12) and for doubling of quantifiers and wh-words in both languages (13). However, in both languages these examples constitute a minority, while most examples cannot be reasonably considered

emphatic. Therefore, although emphasis might motivate some of the occurrences of doubling, it certainly cannot explain all of them.

- |      |  |              |
|------|--|--------------|
| (12) | CANNOT CL:GRAB CANNOT<br>'He cannot grab it' | [RSL:g2-2]   |
| (13) | WHY PANIC WHY<br>'Why the panic?'            | [NGT:208-11] |

### 5.3 Pragmatic explanation

#### 5.3.1 The one new idea constraint

Shamaro (2008) noticed that in all cases, the material intervening between the occurrences of the doubled element was *new information*. I have checked this observation on the RSL and NGT data I analyzed and found it to be true, with very few exceptions. Shamaro suggested that doubling occurs because of the limitation on the amount of new information. Based on Chafe (1994), she claimed that one discourse unit can express one new idea. When both the predicate and the object of the predicate are new information, they should be placed in separate discourse units. This happens, according to Shamaro, by dislocating the object into the post-verbal position yielding the VO order. The verb is then repeated to return the focus of attention to the predicate, a strategy which helps to maintain cohesion of the discourse.

However, there are several objections to this theory. Firstly, according to my research (Kimmelman 2012), the VO order is the unmarked order, at least for plain verbs in RSL. Secondly, Shamaro's explanation is not sufficient to also account for the cases of clause doubling. Thirdly, it cannot account for topic doubling in NGT, as topics are (mostly) old information. Fourthly, as Shamaro herself acknowledges, the verb is not always repeated in the case of the VO order.

### 5.3.2 Foregrounding and backgrounding

I suggest that instead of old/new information, the notions of *fore-* and *backgrounding* should be used to account for doubling in RSL and NGT. Both old and new information can be foregrounded or backgrounded by the language user (Foley & Van Valin 1985). The speaker foregrounds the information that she considers most important for the hearer, and backgrounds the information that bears less importance. In other words, foregrounding information increases its saliency (Wilbur 1994). If we suppose that the doubled constituent is foregrounded, while the material placed between the occurrences is backgrounded, then the facts can be explained.

Firstly, both old information (topics in NGT) and new information (both in RSL and NGT) can be foregrounded. This makes it possible to account for RSL and NGT doubling. Secondly, backgrounding is indeed used mostly for new information for reasons discussed by Shamaro (2008): if the new information is not used in further discourse and/or is not relevant for the following discussion, its status may be lowered. I have checked this intuition and found out that in almost all cases, the information that is placed between the occurrences of the doubled constituent is not referred to or mentioned again afterwards. In the few cases in which the information was mentioned again, doubling was used for emphasis and thus had a different motivation. On the other hand, emphasis itself is functionally related to foregrounding, as the emphasized information is obviously foregrounded. In the case of topic doubling in NGT, one would expect that if the topic is foregrounded, the following sentence will have the same topic. This expectation is confirmed in most cases, too.

This analysis does not only capture instances of verb doubling and topic doubling. For instance, a noun can be doubled with an adjective placed in between the occurrences. Again, the importance of the adjective for the further discourse may be low.

### 5.3.3 Clause doubling and grammaticalization

Clause doubling can be explained by a similar mechanism. When we look at the discourse level, there is a chain of events described by a sequence of clauses. Sometimes the signer purposefully or accidentally breaks the chain of events, so that the clause Y that follows clause X describes a situation that does not follow the situation of X temporally or logically. For instance, clause Y can clarify some unclear situation. Subsequently, the signer may want to repeat clause X to return to the chain of events (see example 14). I would like to hypothesize that clause repetition is the origin of clause-internal doubling (of the form X Y X) in RSL and NGT. In particular, I would like to suggest that clause repetition has grammaticalized into clause-internal doubling partially preserving the function of repairing the storyline.

- (14) CAR CL:POUR.WATER. CAR CL:RIDE. CL:POUR.WATER. [RSL:z1-3]  
 ‘The car poured water over him. There was a car driving there.  
 So it poured water over him’

Let me sketch out a possible grammaticalization path. Both in NGT and RSL arguments can be covert if they are recoverable from the context. Thus quite often a clause consists of just one verb, which already implies that it is not always possible to distinguish between clause repetition and verb-doubling. For instance, in (15) the doubled sign BE.STARTLED can either be analyzed as a clause or as a verb, while the sign SCREAM can be an embedded clause (which would yield the meaning ‘He is afraid to the stage of screaming’).

- (15) BE.STARTLED(.) SCREAM(.) BE.STARTLED. [NGT:4-3]  
 ‘He is afraid and he cries’

Examples like (15) may give rise to the emergence of clause-internal doubling, because the language users reanalyze clause doubling as clause-internal verb doubling. While in examples like (15) the function can still be described as returning to the chain of events after disruption, this model is then extended to other types of intervening constituents and finally to other types of doubled constituents. At the next stage, the function of the construction changes to a more general/grammatical one, namely foregrounding of the doubled material. Finally, once this construction has been established, it can also be used for other purposes related to foregrounding, such as emphasis.

When the X Y X model is conventionalized and becomes part of the grammar of a signed language, it could be used with non-identical doubling. Thus, the foregrounded constituent does not have to be identical anymore in its occurrences, because the signer may decide to further elaborate on its content in the second occurrence.

On the other hand, when the occurrences are identical, the second occurrence naturally becomes less long and strong in pronunciation as it is in fact redundant information and thus less important perceptually. In this way, most of the properties of the X Y X(?) model in RSL and NGT receive a unified explanation.

## **6 Discussion**

In this paper, I have analyzed doubling in RSL and NGT based on small corpora of naturalistic monologue signing. The research has shown that doubling can result from hesitation or a speech error, but at the same time doubling is a grammatical mechanism regularly used in these languages. RSL and NGT are similar with respect to doubling, but NGT has a mechanism of topic doubling which RSL lacks. The central case of doubling follows the X Y X model and is

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used for foregrounding of the doubled constituent and for emphasis. This analysis accounts for doubling of different types of constituents, including topic doubling in NGT. In contrast, previous analyses of doubling in other sign languages (Nunes & de Quadros 2008; Fischer & Janis 1990) cannot be directly applied to RSL or NGT.

I have also proposed a possible path of grammaticalization from repetition of clauses to clause-internal doubling. This path of grammaticalization describes the emergence of both formal properties and functions of doubling in RSL and NGT. Although no direct evidence can be given to support this path of development, the synchronic data supports the hypothesis.

Furthermore, I suggest that emphatic doubling might be a sub-case of foregrounding doubling in RSL and NGT. It is therefore possible to speculate that doubling in ASL and LSB that is used for emphatic reasons could have developed via a similar grammaticalization path. The same can be said about emphatic doubling in spoken languages that may have developed in a similar way. Considering the parallels between clause-doubling and clause-internal doubling in RSL and NGT and the frequency of the former, it would be interesting to look at clause doubling in other sign languages such as ASL and LSB in order to find out whether similar phenomena are attested in them.

The paper has a theoretical consequence, namely that in order to account for the data discussed, the inventory of notions of information structure should include the fore- versus backgrounding distinction, which is orthogonal to the topic/focus distinction.

There is another question that has been left unanswered, namely, why doubling is so prominent in those two sign languages, as well as in other SLs of the world (and not that prominent in spoken languages). One possible answer is that it is connected to short term memory (STM). It has been shown (Geraci, Gozzi, Papagno & Cecchetto 2008 among others) that the STM span is shorter

when signs of a sign language are recalled in comparison to words of a spoken language. Therefore, users of a sign language have limited ability of holding long sequences of signs in the short term memory necessary for processing. Doubling might be a strategy of coping with this limitation, as the most important pieces of information are presented to the addressee not once, but twice. This explanation is in line with the pragmatic function of doubling found for RSL and NGT in this paper.

However, it is important to distinguish cognitive motivation for doubling as discussed in this section and the function of doubling in SL. The fact that doubling is a frequent phenomenon in SL might be connected to the STM limitations; however, it is not the case that doubling is not a part of the grammar of the SL in question. In this paper I have shown that doubling in RSL and NGT is a grammatical phenomenon, while the reason for developing this phenomenon might be cognitive (namely, STM limitations).

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