

DOUBLING IN RSL AND NGT: TOWARDS A UNIFIED EXPLANATION¹

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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. Note that in (2), aspectual morphology is only present on the second occurrence of the verb:

- | | | |
|-----|---|------------|
| (1) | IX GIRL CL:STAND STILL CL:STAND ² | [RSL:x2-6] |
| | ‘The girl is still standing’ | |
| (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

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² Notational conventions: Signs are glossed in SMALL CAPS. Agreement is marked by subscript numbers (for persons: -1, -2, -3). Fingerspelled words are represented with dashes: G-R-U-Š-A. IX stands for index (pointing), CL:GO stands for a classifier construction meaning approximately ‘go’, ASP – aspectual marking, PU – palms up. Examples from other works are cited in their original notation and explained separately, if necessary. Each example from RSL and NGT is followed by a label referring to the text and the signer: for instance, NGT:4-3 means that this example is from the speech of the signer 3 from text 4.

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. In addition, doubling can be used to “save” constructions that would be otherwise ungrammatical because of the limitations on the amount of inflection or incorporation.

In this paper, I discuss doubling in RSL and Sign Language of the Netherlands (further NGT, for Nederlandse Gebarentaal). In both sign languages different constituents (including verbs, nouns, adjectives, adverbs, and whole clauses) can be doubled. I will show that doubling in both 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, a unified explanation for many doubling phenomena on both discourse and clause-internal levels is provided, and it is claimed that the main function of doubling both in RSL and NGT is foregrounding of the doubled information. I will also discuss a possible diachronic relation between discourse doubling and clause-internal doubling in terms of grammaticalization.

In section 2, I provide a brief overview of doubling in spoken and sign languages. In section 3, the methods for data elicitation used in this study are introduced, followed by presentation of the data in section 4. In section 5, several possible analyses of the data are discussed one of them is argued for; in the same section I also discuss the hypothesis concerning grammaticalization of doubling. Section 6 concludes the paper.

Note on terminology: in a doubling situation $X_1 (Y) X_2$, I will call X_1 and X_2 occurrences of constituent X because I want to stay agnostic with respect to the question which of the constituents is the original and which is the copy. For the same reason, I will also omit indexes in the following discussion, so that the models I describe will be marked as $X Y X$, etc.

2 Doubling in Spoken and Sign Languages

In this section, I discuss doubling in spoken (section 2.1) and sign languages (section 2.2). It is clear that most of the explanations for doubling are applicable to both modalities.

2.1 Doubling in Spoken Languages

As stated above, doubling is a prominent phenomenon attested in many spoken and signed languages (see Corver & Nunes 2007). For instance, Kandybowicz (2007) lists many languages that use verb doubling including Indo-European (French, Russian, Spanish), Altaic (Japanese, Korean), Creole (Haitian Creole, Île de France Creole), and sign languages (Brazilian SL and American SL) among others. The set of functions associated with doubling in these languages includes contrastive or emphatic topic and focus and affirmation/polarity (Kandybowicz 2007; Corver & Nunes 2007).

Cheng and Vincente (2008) discuss general syntactic properties of doubling. They argue that the relation between the occurrences of the doubled element is one of movement (which is an argument for the copy theory of movement, see Nunes 2004), and that double realization of the copies is a strategy to “save” a derivation that would otherwise crash. For instance, in German an NP can be topicalized for pragmatic reasons, but if the NP contains the negative determiner *kein*, only the non-negative part of it is topicalized, while the rest is left stranded (3a, b). In order to

save the phonologically impossible derivation, the lower copy of the negative determiner is pronounced (3c).

- (3) a. Sie kennt [keinen alten Professor]. [German]
 She knows no old professor
 ‘She does not know an old professor’
 b. *einen alten Professor sie kennt [k-].
 a old professor she knows no
 c. Einen alten Professor kennt sie [keinen].
 a old professor knows she no

[Cheng & Vicente 2008]

Also, 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. This theory is based on the assumption that syntactic structures generated by the syntactic component become linearized (get word order) based on the relation of asymmetric c-command (Kayne 1994). However, when some element X occurs in the structure more than once, one of its occurrences may c-command some other element Y while the other occurrence would be c-commanded by that element (X ... Y ... X). In this case, linearization is only possible if only one of the copies is realized. However, if one of the copies undergoes morphological fusion with some head Z, it becomes distinct from the other copy and thus does not pose a problem for linearization (X+Z ... Y ... X). For example, according to Martins (2007), in European Portuguese verb doubling occurs when the verb is fused with the head of the affirmative phrase ΣP (4).

- (4) a. Ele comprou o carro, comprou. [European Portuguese]
 He bought the car bought
 ‘He did buy the car.’
 b. $[CP [\Sigma P \text{ ele comprou}_i \text{ o carro}]_k [C' [C \text{ comprou}_i] [\Sigma P \text{ ele}_j [\Sigma' \text{ comprou}_i \text{ }]]]]_k$
 $[VP \text{ ele}_j \text{ comprou}_i \text{ o carro}]]]]_k$ [Martins 2007]

This is confirmed by the fact that a sentence with doubling in European Portuguese can only be used as an affirmative answer to a negative question or as an affirmative reaction to a preceding negative statement.

2.2 Doubling in Sign Languages

A typical example of doubling in a sign language – in this case, Brazilian Sign Language (LSB) – is provided in (5).

- (5) ANN (LIKE) ICE-CREAM LIKE [LSB]
 ‘Ann LIKES ice-cream’ [Nunes & de Quadros 2008:177]

Sign languages in which doubling has been attested are: American Sign Language (ASL: Fischer & Janis 1990, Nunes & de Quadros 2008), Brazilian Sign Language (5) (LSB: Nunes & de

Quadros 2008), Hong Kong Sign Language (HKSL: Sze 2008), Quebec Sign Language (Pinsonneault 1994), Croatian Sign Language, Austrian Sign Language (Šarac, Schalber, Alibašić Ciciliani & Wilbur 2007), and RSL (Šamaro 2008). In the following, I will summarize the most important findings from some of these studies.

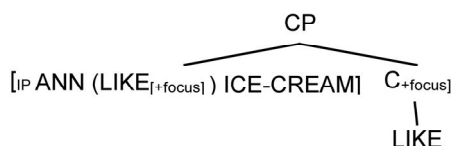
In one of the earliest studies discussing the phenomenon, Fischer and Janis (1990) claimed that verb doubling in ASL occurs when the verb would otherwise become too heavy, namely when an overt object is present and the verb is inflected (6a) or contains a classifier (6b).

- (6) a. S-H-E LISTEN R-A-D-I-O LISTEN^[asp: cont] HEAR! SAY WATER-FLOW, THROUGH [ASL]
 ‘While she is listening to the radio, she suddenly hears that there will be a flood’
 [Fischer & Janis 1990:281]
- b. ELIZABETH EAT R-I-C-E EAT-WITH-CHOPSTICKS [ASL]
 ‘While Elizabeth is eating her rice with chopsticks...’ [Fischer & Janis 1990:284]

This proposal implies that ASL is subject to certain limitations on the amount of grammatical information that can be expressed on one verb. The analysis is thus reminiscent of that of doubling that occurs for the salvation of a derivation as discussed in the context of example (3).

Petronio (1993) studied doubling in ASL and claimed that the second occurrence of the doubled element is base-generated in the C-head (which she assumed to be on the right in ASL) marked with the [+Focus] feature (7). Thus, the constituent that is doubled occurs both in its “normal” (preverbal) syntactic position and in the C-head to express focus meaning. This analysis is supported by the fact that only head elements (wh-words, modals, the main verb, negation and quantifiers) can be doubled in ASL.

(7)



ANN (LIKE) ICE-CREAM LIKE [ASL]
 ‘Anne LIKES ice-cream’ [Petronio 1993; cited by Nunes & de Quadros 2008:179]

Nunes and de Quadros (2008) reanalyzed the same phenomenon in ASL and LSB (10) in light of more recent theoretical accounts. In the spirit of Nunes’ (2004) copy theory of movement, they claimed that doubling marks emphasis and that the doubled element moves to the head of the Emphatic Focus Phrase (E-FocP) in these languages (which is to the left in their analysis). Subsequently, the rest of the clause is moved to SpecTopP by remnant movement. Both copies of the doubled element are pronounced because the copy in E-Foc^o fuses with the focus morphology, thus becoming different from the original copy. The doubled constituent is therefore emphatically focused. Fusion of the verb with the focus morphology, however, is an optional process, so emphatic doubling is optional. The derivation of (8) is represented in a bracketed structure in (9)³.

³ #LOSEⁱ-E-foc# stands for fusion of a copy of LOSE with the emphatic focus head.

- (8) I LOSE BOOK LOSE [ASL, LSB]
 'I LOST the book' [Nunes & de Quadros 2008:180]
 (9) [_{TopP} [_{TP} I LOSEⁱ BOOK]^k [_{Top'} Top [_{EFocP} #LOSEⁱ-E-foc# [_{TP} I LOSEⁱ BOOK]^k]]]

Šamaro (2008) investigated doubling of predicates in RSL and came to the conclusion that doubling occurs for pragmatic reasons. According to her research, doubling in RSL cannot be accounted for in morphosyntactic terms, but is rather related to the limitation on the expression of one piece of new information per intonational unit. As my conclusions are related to hers, I will discuss her analysis in more detail in section 5.3.

3 Methodology

3.1 RSL

3.1.1 Data

I analyzed a corpus of narratives collected and annotated by Prozorova (2009). This corpus was not collected specifically to analyze doubling, or even aspects of the grammar of RSL, but rather to examine the prosodic structure of RSL discourse. 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 by H. Bidstrup. The stories based on *The Pear Film* are labeled G1 and G2, while all other notations refer to the stories based on different comic strips: Z1-3 are about a winter walk, Sh1,2 are about a hat, S1,2 are about a dog, and X1-4 are about painting.

3.1.2 Procedure

In the case of *The Pear Film*, the signers were asked to watch the movie twice and then retell the story for the camera. During the recording, only the hearing researcher was present in the room. In the case of comic strips, two signers participated. One of them was given time to look at one of the comic strips, the strip was then removed and the signer was asked to retell the story. The procedure was then repeated with a different comic strip. The first story was used to familiarize the signer with the procedure; only the second story was used for later analysis. Subsequently, the signers switched roles, and the addressee (the second signer) told two different stories to the first signer. Occasionally, one or both of the signers told one more story based on a different strip.

3.1.3 Informants

The requirement that only native signers with similar background should contribute to the corpus was not strictly followed. Nine Deaf signers participated: four men and five women; information about the participants is provided in Table 1.

Table 1. RSL signers' information

Signer	Sex	Age	Age of exposure	Texts	City of origin
1	m	39	0	G1	Moscow
2	m	41	0	G2	Moscow
3	m	38	0	Z1, Sh1	Moscow
4	f	26	0	Z2, X1	Magadan
5	f	23	7	S1	Moscow
6	f	26	5	X2	Moscow
7	f	27	6	S2, Z3	Moscow
8	m	36	7	Sh2, X3	Moscow
9	f	25	0	X4	Chelyabinsk

The average age of the informants at the time of the recording was 31 years. Seven of them were born and raised in Moscow, and also studied there. Two other participants were born and raised in Magadan (a city situated 7110 km to the east of Moscow) and Chelyabinsk (a city situated 1700 km to the east of Moscow), but at the time of data collection, both had already lived and studied in Moscow for several years. Five subjects came from Deaf families, but the remaining four did not acquire RSL until school (approx. at the age of 6); they also used spoken Russian at home. The signers can therefore be divided into two groups: five native signers, who acquired RSL as their first language in early childhood, and four competent signers.

3.1.4 Transcription

The corpus was annotated by Prozorova (2009) for the purpose of prosodic analysis. She transcribed it in ELAN (<http://www.lat-mpi.eu/tools/elan/>) with several transcription tiers including: right hand, left hand (rough translations of the signs), boundary movements (movements marking prosodic boundaries in RSL), eye blinks, and discursive units. The signs had been translated with the help of a native signer. I added several tiers to code translation of the sentences, activation status of referents, possible Information Structure labels, and commentaries.

All examples of doubling were collected in a separate document (n=79) and analyzed in detail. The precise definition used will be given in section 3.3.

Instances of doubling are not evenly spread across the texts. One text (S1) contained no instances of doubling at all, and two texts (X1, Z2) contained only one. All other texts contained 4 to 11 instances of doubling. This distribution suggests inter-signer variation; in particular, it could imply that signers 4 and 5 behave differently with respect to doubling from other signers in the sample. Future research based on a bigger corpus should test this intuition.

3.2 NGT

3.2.1 Data

I 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 corpus consists of approximately 30 minutes of signing. Given that the NGT texts are spontaneous narratives or retellings of the fables different signers, the corpora of NGT and RSL used are not directly comparable. Therefore, some of the differences to be discussed in the following sections may be attributed to the corpus bias.

3.2.2 Informants

The sociolinguistic characteristics of the NGT signers are summarized in Table 2 below. All signers are deaf and have NGT as their dominant language; moreover, all come from the Amsterdam region, which excludes the possibility of dialectal variation.

Table 2. NGT signers' information

Signer	Sex	Age	Age of exposure	Texts
001	m	69	0	93, 94
002	f	81	2,6	92, 94
003	f	63	0	4
004	f	77	0	4
009	f	30	14	170
010	f	35	3	170
011	m	39	0	208
012	m	39	0	208
047	f	59	4	1058

As can be seen from Table 2, the group is not homogeneous. First, the range of the ages of the signers is large (30 to 81 years with the average of 55 years). Second, one signer had been exposed to NGT only at the age of 14, and four other signers had not been exposed to NGT from birth. One should also notice that the sociolinguistic characteristics of NGT signers are different from the characteristics of RSL signers.

3.2.3 Transcription

The texts contained some glosses created by the Corpus NGT team: there was a sign-by-sign translation. As in the RSL corpus, I added several tiers to code translation of the sentences, activation status of referents, possible Information Structure labels, and commentaries. The translation of the sentences (and partially the assignment of the sentence boundaries) was done

with the help of a native signer. In contrast to the RSL corpus, no prosodic annotation has been done⁴.

All examples of doubling were collected in a separate document (n=136) and analyzed in detail. The definition of doubling I used is discussed in section 3.3.

Instances of doubling were found in all the texts chosen from the NGT corpus, although text 1058 contained only one instance. Doubling is well represented both in texts by older signers (for instance, text 4 contains 21 instances of doubling) and by younger signers (for instance, text 170 contains 24 instances of doubling), which implies that the age variation of the informants does not appear to be of importance.

3.3 Defining Doubling

In this research on doubling, I am working from form to meaning, that is, whenever I come across an instance of doubling, I try to account for its semantics. Therefore, I decided to define doubling as broadly as possible, and then classify it.

If two constituents were used to refer to the same object, action or situation, it was considered doubling. Thus my list of doubling constructions of RSL and NGT contained not only prototypical cases of verbal doubling, but also doubling of all types of constituents, including clauses, and instances of non-identical doubling that can be considered repetition. By using this definition, I do not intend to make any theoretical claims; for instance, I am not claiming that doubling as a result of hesitation has the same nature as verbal doubling. The purpose of using this definition was to collect as many *potential* instances of doubling and then classify and analyze them. At the stage of collecting instances of doubling, one can never be sure that a particular occurrence is a production error and not grammatical doubling; this decision can only be made during the analysis of doubling in the languages studied.

I did not consider lexical identity of occurrences to be a necessary condition for classifying a construction as doubling. I have made this decision based on examples from RSL and NGT like the one given in (10a). 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 (10b), where a classifier construction is repeated.

- | | | |
|---------|--------------------------------|------------|
| (10) 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 was not considered necessary, I did not consider identity a necessary criterion in the cases of clause doubling either. I therefore also included examples that would be considered an echo in the discourse analysis tradition.

⁴ I do not discuss prosody of doubling in this paper.

Still, as I will show in sections 4 and 5, I do not consider all instances of doubling that I collected to be governed by the same mechanisms. Moreover, in this paper I discuss in detail only the instances of doubling that cannot be explained by hesitation or clarification.

4 Data

In this section I discuss the properties of doubling in RSL and NGT. First I discuss doubling of the form X Y X, which is the most important type of doubling in these languages (section 4.1). After that, I will consider some properties of the occurrences of doubled constituents, namely morphological and quantitative differences between the occurrences (section 4.2). In section 4.3 I present a summary of the data.

4.1 The X Y X Model of Doubling

The type of doubling which appears most frequently in both our RSL and NGT data – and 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 other constituent. Whether the occurrences are identical or not is a separate question which will be discussed in section 4.2. The RSL corpus contains 46 such cases (58% of all instances of doubling), and the NGT corpus 97 cases (71% of all instances of doubling).

Aside from that, doubling can be built using the X X(′) model, where the occurrences immediately follow each other. However, the latter model is used for clarification or occurs due to speech errors. Therefore one could say that doubling in those cases is due to processing difficulties, and is not a part of the grammar of the SL discussed here. For the sake of space I do not discuss these cases further in this paper.

4.1.1 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 (11), a subject (12), or an adjunct (13)).

- | | | |
|---------|-------------------------------------|--------------|
| (11) a. | LOOK G-R-U-Š-A 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’ | |
| (12) a. | THEN CL:DRIVE SOMEONE CL:DRIVE | [RSL:z2-4] |
| | ‘Then someone is driving a car’ | |
| b. | NICE EVERYTHING NICE | [NGT:208-11] |
| | ‘Everything is nice’ | |

- (13) a. IX GIRL CL:STAND STILL CL:STAND [RSL:x2-6]
 ‘The girl is still standing’
 b. COLD A.BIT COLD [NGT:208-12]
 ‘It was a bit cold’

In both sign languages, nouns can be doubled with an adjective appearing in between, as shown in (14) by the sequence BOY OTHER BOY, and wh-words may be doubled in clause-initial and clause-final position (15).

- (14) a. BOY OTHER BOY CL:THROW SNOWBALL S-N-E-Ž-O-K CL:THROW [RSL:z3-7]
 ‘Another boy threw a snowball’
 b. FOREST BEAUTIFUL FOREST AROUND [NGT:92-2]
 ‘There is a beautiful forest around’
 (15) a. WHERE SELL HAT WHERE [RSL:sh1-3]
 ‘..., where they sell hats.’
 b. WHY PANIC WHY [NGT:208-11]
 ‘Why the panic?’

Finally, modal verbs can also be doubled in RSL, with the rest of the clause being placed in between the two occurrences (16). I have not found parallel examples in NGT, but given the limited size of the corpus, this does not mean that this type of doubling does not exist.

- (16) WANT STREET WALK WANT [RSL:z1-3]
 ‘He wants to go for a walk on the street’

In NGT yet another kind of doubling exists, namely topic copying (Crasborn, van der Kooij, Ros & de Hoop 2009 call it “topic agreement”, see also Bos 1995⁵). This phenomenon has been previously described for NGT, and similar processes exist in other languages (ASL (Neidle, Kegl, MacLaughlin, Bahan & Lee 2000, Padden 1988), HKSL (Sze 2008)). 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. 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.

Pointing referring to topical NPs occur at the end of sentences in NGT rather often. My corpus includes 39 instances of topic copying (29% of all doubling in NGT). However, unlike the findings of Crasborn et al. (2009), a topic copy can appear not only at the end of the sentence (17), but also inside the sentence (18).

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

⁵ Bos (1995) analyzed this phenomenon as subject pronoun copying. However, Crasborn et al. (2009) show that not only pronouns and not only subjects can be doubled by a clause-final pronoun, but rather topics (both ‘aboutness’-topics and scene-setting topics).

- (18) a. IX-1 GO TRAIN IX-1 IN [NGT:208-11]
 'I enter the train'
 b. WANT IX-1 PU IX-1 IX [NGT:93-1]
 'I want it'
 c. IX-3 TIME IX-3 LEAVE [NGT:94-1]
 'It's time for her to leave'
 d. IX-1 IX IX-1 NORMAL IX-1 AFRAID IX TRUCK PU [NGT:170-9]
 'Normally I am afraid of trucks'

In (18) all instances of the doubled pronominal are considered topical as they refer to the only activated argument in each sentence; also from the context it is clear that the sentences are about these arguments. In (18c) it is not clear whether the topic is the subject of the sentence, so this example demonstrates that the phenomenon is indeed topic doubling, and not subject doubling.

It is important to note that when topic copying occurs, the element being copied is really a topic and cannot be analyzed as an instance of focus. It is not true that in all cases the doubled element introduces a new topic (and the topic shift occurs), in which case it could be analyzed as being in fact focal (Erteschik-Shir 1997:57). For instance, in (19) the whole episode is about the signer (so the first person pronoun is being used), and when doubling is used, it is not possible to say that a new topic is being introduced.

- (19) [IX-1 BACK HOW?] IX-1 FORCED IX-1 TAXI IX-1 WAY HOME PU [NGT:208-11]
 'How do I get back home? I had to take a taxi to go home.'

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.

There are also a few instances of doubling both in RSL (4 or 5 cases) and NGT (2 or 3 cases) where the doubled element is a modifier of a constituent, be it an adjective (20a) or an adverb (20b).

- (20) a. SMALL BOY SMALL WINDOW LOOK [RSL:z1-3]
 'A small boy looks out of the window'
 b. IX-1 ALSO CALM DRINK CALM [NGT:208-11]
 'I also drank calmly'

4.1.2 Clause Doubling

Both in RSL and NGT clauses can be doubled, and sometimes the occurrences of the clauses are separated by another clause (21). Thus, clause doubling can be said to occur in accordance with the X Y X model.

- (21) 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’

This phenomenon is relatively common both in RSL and NGT. In RSL we found 8 instances of clause-doubling by this model (10%) and in NGT 9 instances (7%). It is not clear whether the difference between the two languages is significant, and if it is, what causes this difference.

4.2 Identical and Modified Copies

In the case of the X Y X model, the occurrences of X can either be identical⁶ or different. In this section both situations are discussed.

4.2.1 Identical Doubling

Let us first look at the identical cases. Remember that the RSL corpus contains 46 instances following the X Y X model; in 33 of these (i.e. in 71 % of this model), 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 (22) (including modal verbs (23)), adverbs (24), nouns (25), adjectives (26), and clauses (27).

- (22) a. MEET / IX POSS-A FRIEND / MEET [RSL:s2-7]
 ‘He met his friend’
 b. FEAR OF IX BEAR FEAR [NGT:92-2]
 ‘He was afraid of the bear’
 (23) PROHIBITED HERE CL:SLEIGH PROHIBITED [RSL:z1-3]
 ‘It is prohibited to sleigh here’
 (24) a. HOME(ADV) CL:GO HOME(ADV) [RSL:z1-3]
 ‘He went home’
 b. IX-1 ALSO CALM DRINK CALM [NGT:208-11]
 ‘I also was drinking calmly’
 (25) a. SUDDENLY WIND STRONG WIND [RSL:sh1-3]
 ‘Suddenly there was a strong wind’
 b. FOREST MUCH FOREST [NGT:93-1]
 ‘There’s a lot of forest around’
 (26) SMALL BOY SMALL WINDOW LOOK [RSL:z1-3]
 ‘A small boy looks out of the window’

⁶ Doubling of the verb is sometimes referred to as *verbal echo* (Pinsonneault 1994) but I do not use this term in order to avoid confusion with the use of the term *echo* in discourse analysis.

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

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 (but see section 4.2.3).

4.2.2 Modified 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 (28).

- (28) LOOK G-R-U-Š-A LOOK [RSL:g2-2]
 face: doubtfully
 ‘[He] looked at the pear doubtfully’

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 (29).

- (29) LIPSTICK CL:PAINT LIPSTICK CL:PAINT(detailed) [RSL:x3-8]
 ‘[He] painted with a lipstick’

This example as well as 2 other examples in RSL and 2 examples in NGT involve role shift during the second occurrence of the verb. However, in general it is not common when role shift occurs between the two occurrences of the doubled constituent.

In several cases in RSL and NGT, the second occurrence of a verb carried aspectual inflection such progressive (30). Sometimes the second occurrence was marked with a distributive marker (31).

- (30) 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 looks out of the window’
 (31) THREE GRATEFUL CL:GIVE / THREE CL:GIVE-ASP.DISTR⁷ [RSL:g2-2]
 ‘[He] gave three [pears] to three [boys]’ (distributive meaning)

Looking at non-verbal signs, the two occurrences of a sign can also differ in some phonological aspect such as location (32) or movement (33). In (32) the signer first signs WATER in a neutral

⁷ The first sign THREE refers to the themes (three pears), while the second sign THREE refers to the recipients (three boys).

location, while the second occurrence is signed lower (depicting the real-world location of the water). In (33) the first occurrence of the sign NEVER.MIND is signed to the right, while the second is signed in the neutral space.

(32) WATER IX WATER' [NGT:93-1]
'There's water below'

(33) NEVER.MIND IX NEVER.MIND' [NGT:208-11]
'It does not matter'

Sometimes the occurrences of the signs are different lexemes, as is true for the two signs meaning 'whole' in (34). In this case, it is not possible to tell whether one lexeme is more specified than the other.

(34) 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 (35).

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

4.2.3 Phonetic Differences

When the two occurrences of a doubled constituent differ in some respects, for instance, when one of them is marked for aspect while the other one is uninflected, it comes as no surprise that they are not identical in length either. A verb marked with continuous/habitual aspect, manifested by a repetition of movement, will always be longer than its unmarked counterpart.

However, if we look only at doubling involving morphologically identical occurrences, the copies are still not always completely identical, because in many cases, one of the occurrences is shorter and weaker 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(s), and it can also be shorter in duration. In addition, while one of the occurrences may be two-handed, the other can be one-handed. For instance, in (36) the first occurrence of the sign CHAT contains larger and longer movements. For an impression of the difference in the amplitude of the movement, see Figure 1.

(36) IX-1 AREA CHAT NICE CHAT
‘So we chatted nicely’

[NGT208:12]



a. CHAT (first occurrence)

b. CHAT (second occurrence)

Figure 1. Occurrences of the sign CHAT

I consider all these properties of one of the occurrences to be instantiations of weaker articulation, as all of them are characterized by less muscle involvement and thus less effort. Note that stress or focus marking in sign languages usually manifests itself in the opposite way: stressed signs tend to be articulated at a higher location than normal, to have larger movement, and to involve more muscle tension (Wilbur & Schick 1987; Waleschkowski 2011).

In judging which copy is weaker, I used only my intuition; therefore, small differences in length and form that are not easily perceived were disregarded.

In RSL, out of 33 cases of identical doubling, the first occurrence was longer and phonetically stronger in 21 cases; in the remaining 12 cases, the occurrences were of equal length and strength. There was no single case in which the second occurrence was longer/stronger. For NGT, I excluded cases of doubling of indexical signs, as indexical signs are usually too short to be compared to each other. In the remaining 51 instances of identical doubling, the first occurrence was longer and stronger in 32 cases, the second occurrence was longer in 6 cases, and in 13 cases, the occurrences were equal in length and strength. Thus the general tendency is clear: in both sign languages, the first occurrence is usually longer and stronger than the second one.

When clauses are doubled, the second occurrence is also usually shorter. Moreover, the tendency observed in section 4.2.2, namely 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. A possible explanation for the difference in length and strength will be discussed in section 5.

5 Analysis

In this section, I attempt to answer the question why doubling in RSL and NGT occurs. More specifically, I want to uncover the function of doubling in these languages, as this function can be the motivation for doubling. I am also interested in generalizing the explanation to doubling of different types of constituents. Obviously, doubling as a result of hesitation or speech errors is

not discussed here as it is a grammatical phenomenon in the strict sense. Therefore, the focus will be on the X Y X model of doubling.

Firstly, I discuss possible morphosyntactic motivations for doubling previously offered on the basis of other sign languages⁸. Then I discuss emphasis as one of the functions of doubling. Finally, based on the insights from Šamaro (2008), I offer a pragmatic explanation of doubling in RSL and NGT.

5.1 Morphosyntactic Motivation

As discussed in section 2.2, for some of the doubling phenomena, morphosyntactic explanations have been offered.

1. Doubling occurs 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).
2. Doubling results from limitations on argument incorporation (Kegl 1985).
3. Doubling occurs when the verb cannot have an overt object expressed in the same sentence with it (Liddell 2003).

As Šamaro (2008) has shown for RSL, the first two 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. Moreover, the verb that is doubled is sometimes not inflected or does not contain a classifier at all (37).

- | | | |
|---------|---|------------|
| (37) a. | PROHIBITED HERE CL:SLEIGH PROHIBITED
‘It is prohibited to sleigh here’ | [RSL:z1-3] |
| b. | FEAR OF IX BEAR FEAR
‘He was really afraid of the bear’ | [NGT:92-2] |

Finally, the first two explanations only apply to verbs. We have seen, however, that not only verbs can be doubled, but all kinds of elements including clauses. If we exclude clauses from consideration, we might still conclude that doubling according to the X Y X model has some morphosyntactic motivation (as, for instance, proposed by Nunes & de Quadros (2008)), but including the clause doubling cases in the analysis is also desirable.

The third motivation can be proven false – at least for RSL and NGT – by comparing pairs of examples which contain the same verb and an overt object, where one example involves doubling, but the other does not (Šamaro 2008). The following RSL (38) and NGT (39) examples illustrate that such pairs do exist. Consequently, in these cases, doubling cannot be explained by the intransitivity of the verb.

- | | | |
|---------|--|------------|
| (38) a. | LIPSTICK CL:PAINT
‘[He] paints with a lipstick’ | [RSL:x4-9] |
| b. | BOY CL:PAINT1 LIPSTICK CL:PAINT2
‘The boy paints with a lipstick’ | [RSL:x2-6] |

⁸ But as I have shown in Section 2, related explanations have been applied to spoken languages as well.

- (39) a. CL:GO PARENTS [NGT:4-3]
 ‘We are going to my parents!’
 b. IX-1 PU CL:GO OTHER CAFE CL:GO [NGT:208-12]
 ‘I went to a different cafe’

Also, this explanation cannot account for the doubling of constituents other than verbs.

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, if we define emphasis as the category that expresses the surprise of the speaker with the fact that some low-ranked alternative is chosen (Krifka 2008). Thus, 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 (40) and for doubling of quantifiers (41) and *wh*-words (42) in both languages. For instance, in (40) the emphasis arises because the character cannot grab the pear despite the fact that he tries hard. In (41a) the chance that the *whole boy* gets dirty is a low-ranked alternative (it would be more likely that some part of the boy gets dirty) and in (41b) the chance that the bag including *everything* was closed inside is low-ranked because it is more likely that only some things were closed inside. In (42) the signer emphasizes that there was really no reason for panic.

- (40) CANNOT CL:GRAB CANNOT [RSL:g2-2]
 ‘He cannot grab it’
 (41) a. WHOLE1 BOY WHOLE2 DIRTY [RSL:z3-7]
 ‘The boy is all dirty’
 b. THIRDLY BAG ALL CLOSE ALL IN [NGT:208-12]
 ‘Thirdly, there was a bag with everything including closes inside’
 (42) WHY PANIC WHY [NGT:208-11]
 ‘Why the panic?’

In some examples, the context and the prosodic properties of examples also suggest emphasis, as in (43) where the nonmanuals emphasize the high degree of fear felt by the character.

- (43) FEAR OF IX BEAR FEAR [NGT:92-2]
 ‘He was really afraid of the bear’

However, in both languages, these examples constitute a minority, while most examples (including most examples discussed above) cannot be reasonably considered emphatic. Therefore, although emphasis might motivate some of the occurrences of doubling, it certainly cannot explain all of them. All in all, emphasis is a tricky category. Whether some of the doubling examples are perceived as emphatic by the native signers needs to be checked experimentally.

5.3 Pragmatic Explanation

In this section, I will present a more convincing account of doubling in RSL and NGT, which is based on Šamaro's (2008) insights on doubling in RSL (section 5.3.1), but is developed further to account for other RSL and NGT phenomena (sections 5.3.2-5.3.4).

5.3.1 The One New Idea Constraint

Šamaro (2008) investigated doubling in RSL and came to the conclusion that the phenomenon cannot be attributed to morphosyntactic factors. Instead she offered an alternative explanation based on pragmatics.

She 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. In RSL, only in 2 cases, the information between the occurrences had been mentioned 2 or 3 clauses earlier, and thus could be considered not new. In NGT, I only found 3 cases in which the intervening information could be considered old (a personal pronoun in all three cases), for instance (44).

(44) CALL-3 IX-1 CALL-3
'I call him'

[NGT:208-11]

Based on her observation, Šamaro 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 Šamaro, 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.

I have several objections to this theory. Firstly, according to my research (Kimmelman 2012), the VO order is the unmarked one at least for plain verbs in RSL. Secondly, Šamaro'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. The limitation on the amount of new information is therefore not relevant. Fourthly, as Šamaro (2008) acknowledges, the verb is not always repeated in the case of the VO order. Finally, the claim that the two portions of new information (the verb and the object) in the VO order belong to separate discourse units was not demonstrated by Šamaro (2008). However, her analysis seem to be on the right track. In the following section I modify her ideas to account for the RSL and NGT data.

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)⁹. The speaker foregrounds the information that s/he 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 we can explain the facts.

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 Šamaro (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 has been 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.

Let us consider a couple of examples. In (45a) a new object appears between the occurrences of the verb, namely a stick. This object, however, is not important for the further discussion and is never mentioned afterwards, therefore, it is backwarded. In (45b) the destination of the train is mentioned, however, this will not be further discussed in the following discourse, hence it is backwarded.

- (45) a. CL:WAVE STICK CL:WAVE [RSL:sh2-8]
 ‘He waves a stick’
 b. IX MONITOR GO ROTTERDAM GO [NGT:208-11]
 ‘The monitor says that [the train] goes to Rotterdam’

Sometimes an adjunct appears between the occurrences of the verb, as in (46). In this case, it is not possible to talk about the activation status of the element that is backgrounded. The adverb, however, is never foregrounded; it never constitutes the center of attention of the signer.

- (46) a. IX GIRL CL:STAND STILL CL:STAND [RSL:x2-6]
 ‘The girl is still standing’
 b. BRING HALF 4 BRING [NGT:170-9]
 ‘[I] brought [her] at half 4’

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. For instance, in (65) the fact that the forest was beautiful plays no role in the further story (which is about meeting a huge bear in the forest).

⁹ See also Wilbur (1994) on foregrounding in ASL. Also note that these terms should not be confused with Figure/Ground relations in locative constructions.

- (47) FOREST BEAUTIFUL FOREST AROUND
 ‘There is a beautiful forest around’

[NGT:92-2]

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 occasionally 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.

In the RSL example in (48), for instance, the signer first signs the clause CAR CL:POUR.WATER to describe the situation ‘the car poured water over him’. However, no car was mentioned before, so the signer decides that the situation should be clarified by adding the information that there was a car driving. After the clarification, he returns to the storyline by repeating the first clause.

- (48) CAR CL:POUR.WATER. CAR CL:RIDE. CL:POUR.WATER.
 ‘The car poured water over him. There was a car driving there.
 So it poured water over him’

[RSL:z1-3]

In the NGT example (49), the signer first signs the clause ONE WOMAN STARE to convey the situation ‘a woman was staring at us’. Then he clarifies the reason for her staring: she was a hearing person (while the signer and his friends were using sign language). Subsequently, he returns to the story line by repeating (a reduced version of) the first clause.

- (49) ONE WOMAN STARE. HEARING. IX STARE
 ‘One woman stared at us. She was hearing. So she stared’

[NGT:208-12]

Thus, clause repetition is a discourse-level phenomenon that has to do with the storyline and the chain of events; it is a way of coping with disruptions of the chain. I would like to hypothesize¹⁰ 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.

Let me provide some evidence in favor of this hypothesis. 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 (50) 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 because of the screaming’).

- (50) BE.STARTLED(.) SCREAM(.) BE.STARTLED.
 ‘He is afraid and he cries’

[NGT:4-3]

¹⁰ Hypotheses about diachronic development in signed languages are notoriously difficult to prove, as we generally do not have access to any diachronic evidence. Thus this hypothesis can be supported by its explanatory force.

Examples like (50) may give rise to the emergence of clause-internal doubling, because the language users reanalyze clause doubling as clause-internal verb doubling (see Table 3). While in examples like (50), 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 has been conventionalized and became part of the grammar of a signed language, it probably can be used with non-identical doubling (Stage 5 in Table 3). 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 (Stage 5 in Table 3). In this way, most of the properties of the X Y X(′) model in RSL and NGT receive a unified explanation.

Table 3. Grammaticalization of doubling

	Form	Function
Stage 1	Clause-1 Clause-2 Clause-1	Return to the main storyline
Stage 2	V-1 V-2 V-1	1. Return to the main storyline 2. Foregrounding of the event expressed by V-1
Stage 3	X Y X	Foregrounding of X and backgrounding of Y
Stage 4	X Y X	1. Foregrounding of X and backgrounding of Y 2. Emphasis on X
Stage 5	X Y X′ X Y X(reduced)	1. Foregrounding of X and backgrounding of Y 2. Emphasis on X

The hypothesized grammaticalization path of doubling in RSL and NGT is summarized in Table 3.

5.3.4 Problematic Cases

Even if we accept the foregrounding function of doubling in RSL and NGT, some cases still remain problematic.

The most general and important problem is the X Y X′ model. If doubling is generally used for foregrounding, then it is not clear why aspectual and other grammatical markers sometimes appear on one of the occurrences only (usually the second one). Probably some other factors are involved in this phenomenon, but at present, it is unclear what those factors might be.

In addition, my corpus contains a couple of RSL examples that are not easily explained by the analysis proposed in this paper.

- (51) IX CLOSE1 CLOSE2 IX THREE BOY OTHER THREE LOOK [RSL:g1-1]
 ‘Not far from there three other boys look [at him]’
 (52) LITTLE BOY LITTLE WINDOW LOOK [RSL:z1-3]
 ‘A little boy looks out of the window’

In (51) the numeral *THREE* is repeated with the noun intervening between the occurrences. For the storyline, the number of the boys is relevant, however, so is the fact that the three persons were boys. Therefore, if the numeral is foregrounded in (51), then it is unclear why. In (52) the adjective *LITTLE* is doubled and frames the noun modified by, although the adjective clearly does not represent the most important information. This sentence, however, appeared discourse-initially, so doubling of the adjective might be connected to false start. Adjective doubling occurs in at least one other case in RSL.

The NGT example (53) is reminiscent of example (51) in that the numeral *FOUR* is repeated. This instance of doubling, however, might be connected to emphasis, as the signer was probably surprised by the number of policemen coming.

- (53) FOUR TRAIN POLICEMAN FOUR COME [NGT:208-12]
 ‘4 train policemen came’

Examples (51), (52) and (53) might in fact be instances of code-mixing in RSL and NGT. In both languages, the canonical position of adjectival modifiers is post-nominal, while in Russian and Dutch adjectival modifiers are pre-nominal. Possibly in (51)-(53), the signer first used the spoken language word order (Adjective – Noun), while repeating the adjective post-nominally as a repair strategy.

In NGT (6 cases) and RSL (7 cases), a clause was sometimes doubled without modification and the occurrences appeared adjacent to each other (54).

- (54) IX-1 DRINK. IX-1 DRINK [NGT:208-12]
 ‘I drink’

In examples like (54), the function of doubling is unclear. In some of these cases, emphasis might play a role, but not in all of them. Alternatively, it might be the case that this is also an instance of hesitation and that the signer repeats the clause in order to have time to think about the further discourse. This hypothesis is supported by the fact that this kind of clause-doubling often happens at the transitions between episodes.

The final issue discussed here is the case of *wh*-doubling. In many cases the *wh*-word is doubled for emphatic reasons. In most of the cases it is possible to claim that the *wh*-word is foregrounded as it is the most important element in the question. However, as (55) shows, *wh*-words can be doubled when they are used in relative clauses as well:

- (55) WHERE SELL HAT WHERE [RSL:sh1-3]
 ‘..., where they sell hats.’

It is not clear whether in cases like (55) the *wh*-word is foregrounded. It might be the case that this kind of examples represent a further stage of grammaticalization. Doubling of *wh*-words both in questions and in relative clauses can be used to mark boundaries of the clauses. This path of development, namely, from elements related to focus to markers of (embedded-) clause boundaries is attested in other languages. For instance, in Tok Pisin (Sankoff & Brown 1976:632) a demonstrative *ia* ‘here’ has a focusing function and a “bracketing” function, that is, it is also used to mark both the left and the right boundary of a relative clause (56).

- (56) Meri **ia** [em i yangpela meri, draipela meri **ia**] em harim istap [Tok Pisin]
 ‘This girl, who was a young girl, big girl, was listening’ [Sankoff & Brown 1976]

6 Conclusions

In this paper, I analyzed doubling in RSL and NGT based on small corpora of naturalistic monologue signing. Doubling turned out to be very prominent phenomenon in both languages, although the amount of doubling used is probably subject to individual variation (see section 3). The research has shown that doubling can result from hesitation or a speech error (cases not discussed in this paper), 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 used for foregrounding of the doubled constituent and for emphasis (see Table 4). 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.

Table 4. Fore- and backgrounding

BACKGROUNDING		
X	Y	X
FOREGROUNDING		

I 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 (see Table 3). Although no direct evidence can be given to prove this path of development, the synchronic data supports the hypothesis.

Furthermore, I suggested 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. To the best of my knowledge, up to now only clause-internal doubling has been analyzed.

One of the theoretical consequences of the paper is 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 are some important questions considering doubling in RSL and NGT that have not been discussed in this paper, namely the syntax of (clause-internal) doubling, as well as prosodic properties of doubling. These questions are left for future research.

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