

THE UNIVERSAL QUANTIFIER ‘ALL’ IN TURKISH SIGN LANGUAGE

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2019

THE UNIVERSAL QUANTIFIER ‘ALL’ IN TURKISH SIGN LANGUAGE

Thesis submitted to the
Institute for Graduate Studies in Social Sciences
in partial fulfillment of the requirements for the degree of

Master of Arts

in

Linguistics

by

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2019

DECLARATION OF ORIGINALITY

I, Burcu Saral, certify that

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ABSTRACT

The Universal Quantifier ‘All’ in Turkish Sign Language

This thesis aims at investigating the universal quantification in Turkish Sign Language (TİD). Four signs have been investigated. Contrary to the initial hypotheses of this study, not all of the four signs have been identified as expressing universal quantification. Based on the findings, these four signs are glossed as ALL, ALL_OF_THOSE, THOSE and ALL_OF_THOSE^SAME. Based on the findings of grammaticality judgment and picture description tasks with native and non-native signers, I argue in this thesis that three of the signs I investigated express universal quantification: ALL is a universal quantificational determiner. ALL_OF_THOSE is a complex sign having a universal quantificational determiner component, which is expressed by the mouthing of the Turkish word *hepsi* 'all' and a demonstrative determiner/pronoun, and has a partitive meaning. ALL_OF_THOSE^SAME is an incorporated sign having the handshape of SAME and the movement of ALL_OF_THOSE. The fourth sign, THOSE, which differs from ALL_OF_THOSE only in the absence of mouthing is a plural demonstrative pronoun.

ÖZET

Türk İşaret Dili'ndeki Evrensel Niceleyici 'Hepsi'

Bu çalışmada Türk İşaret Dili'ndeki evrensel niceleyicilerin incelenmesi amaçlanmıştır. Dört işaret tespit edilmiştir. Başlangıçtaki hipotezin aksine, tespit edilen dört işaretin hepsi evrensel niceleyici kategorisinde değildir. Bulgulara dayanarak bu dört işaretin TİD karşılığı 'HEPSİ', 'ŞUNLARIN_HEPSİ', 'ŞUNLAR' ve 'ŞUNLARIN_HEPSİ^AYNI' olarak belirlenmiştir. Doğuştan TİD öğrenen ve daha ileriki yaşlarda TİD öğrenen işaretçiler ile yapılan dilbilgisellik değerlendirme ve resim betimleme çalışmaları doğrultusunda bu dört işareten üçünün evrensel niceleyicilik taşıdığını öne sürüyorum: 'HEPSİ' işaretinin evrensel niceleyici belirleyicisi olduğunu, 'ŞUNLARIN_HEPSİ' işaretinin 'hepsi' ağzlaması ile aktarılan evrensel niceleyici belirleyicisinden ve gösterme belirleyicisinden/zamirinden oluşan karmaşık bir işaret olduğunu ve parçacıl tanımlık anlamının olduğunu, 'ŞUNLARIN_HEPSİ^AYNI' işaretinin de 'AYNI' işaretinin elşekli ve 'ŞUNLARIN_HEPSİ' işaretinin hareketinden oluşan bir iç içe geçmiş işaret olduğunu öne sürüyorum. 'ŞUNLARIN_HEPSİ' işareti ile arasında sadece ağzılamanın olmaması farkı olan dördüncü işaret 'ŞUNLAR' ise çoğul gösterme zamiridir.

ACKNOWLEDGEMENTS

First and foremost, I want to express my heartfelt thanks to my thesis advisor, Assoc. Prof. Meltem Kelepir, for her endless patience and never-ending support. I am deeply indebted to her for her guidance and for the feedback she provided me during this challenging period. Without her guidance, knowledge, patience and support, this thesis would not have been completed. Even when there was physical distance between us due to her sabbatical, she never made me feel alone in this journey and she was there whenever I need her despite her busy schedule.

I would also like to thank the members of my thesis committee, Assist. Prof. Kadir Gökgöz and Assist. Prof. Nilüfer Şener, for their valuable comments on my thesis. It is their comments that helped me to improve and to clarify some points. I am grateful to Assist. Prof. Kadir Gökgöz not only for his being in my committee but also for his kindness, support and comments through all the phases of the creation of this thesis.

I would like to thank Prof. Aslı Göksel who was formerly my morphology professor. I had the chance to work with her in the Sign-Hub project. Not only was she a great professor, she also taught us many things regarding team work and conducting research. She was also very enjoyable to be around. I am greatly indebted to her.

I would also like to express my thanks to Assoc. Prof. Elena Guerzoni. Even though I did not have the chance to take any semantics courses from her, I managed to solve some problems that I had difficulty working on by means of her feedback and the small meetings we set to discuss my data. She was very helpful and supportive at all times.

It is Prof. Sumru Özsoy who encouraged me to pursue an MA in Linguistics in my undergrad years since she really impressed me with her profound knowledge. Therefore, thanks to her I met sign language, which has proven to be an invaluable treasure that is yet to be unearthed. These led me to study sign language.

I would also like to express my special thanks to the lovely Sign-Hub Project team. In addition to it being my first job experience as a research assistant, it was very valuable to be working with the team academically and to be part of such a significant project. I would like to express my gratitude to Gül Yiğit for being one of the consultants in my data elicitation process and she was very helpful throughout this process. I also would express my thanks to Elvan Tamyürek Özparlak not only for being one of the consultants in my data elicitation process but also for being a friend rather than a co-worker and continuously teaching me Turkish Sign Language by practicing and giving feedback.

I am also grateful to the entire Department of Linguistics at Boğaziçi University where I took many Linguistics courses and met wonderful professors. Along with offering a great education, this department brought me lots of friends. I would like to express my thanks to all of them for all the discussions on Linguistics and the pleasant times we spent together. Also, I feel very happy to have shared the same working place with Buket Ela Demirel, Noyan Dokudan and Demet Kayabaşı who created an entertaining and relaxing atmosphere for studying. Additionally, I feel very lucky to have met Buket, Noyan and Hande Sevgi. We endured all the challenges we faced together. We have always believed in each other. I am really glad to have them because they are more than friends to me.

I must express my gratitude to the great people who are the members of the Boğaziçi Zeibek Team for giving me the best experiences and memories of my

university life. It is not merely a folk dance team but rather my second family.

Thanks to the team, I had the chance to have a taste of being a performer and a trainer and it was a great honor to share the same stage with them. I believe that whenever I come back to Boğaziçi, I know that they will welcome me as if I have never left. Additionally, I am grateful to this community because if it had not been for them I would not have met Hüseyin Emin Eren, whom I am blessed to have in my life. He witnessed every single step of this stressful and challenging period. He always supported me along the way and never stopped believing in me.

My deepest gratitude goes to my family. Without their unconditional love and support, I would not be the person I am now and I would not be where I am now. Whenever I had struggles, my mother, father and brother were there to help me. I really consider myself lucky to have them as my family. They always believed in me and gave me the courage to go on with my studies. I must express that I love them very much and I am so glad that I have them.

This thesis been possible thanks to the SIGN-HUB project, which has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 693349.

*to my grandparents,
Nebahat-Erdoğan Türker, who are no longer with us,
and Melahat-Burhan Saral*

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ABBREVIATIONS

ASL	American Sign Language
DGS	German Sign Language (<i>Deutsche Gebärdensprache</i>)
LIS	Italian Sign Language (<i>La Lingua Italiana dei Segni</i>)
LSC	Catalan Sign Language (<i>Llengua de signes catalana</i>)
NGT	Sign Language of the Netherlands (<i>Nederlandse Gebarentaal</i>)
RSL	Russian Sign Language
TİD	Turkish Sign Language (<i>Türk İşaret Dili</i>)
TSL	Taiwan Sign Language

CHAPTER 1

INTRODUCTION

To my knowledge, there has been no comprehensive study done on quantifiers in Turkish Sign Language (TİD) before and only a small number of studies have investigated quantifiers in other sign languages. This thesis is the first study on quantifiers in TİD. The study reported in this thesis focused on signs which were hypothesized at the beginning of the study to express universal quantification. The following chapters present my preliminary observations on these signs.

The issues addressed in the works done on quantifiers in other sign languages can be summarized as the following: the types of quantifiers identified, the position of the quantifiers with respect to the restrictor noun, and the way the quantifier domain is represented in the signing space. It has been shown in the literature that similar to oral languages, sign languages have signs that can be categorized as existential, universal, negative and numeral. While in some sign languages the position of the quantifier with respect to the restrictor noun is flexible, in some others it is strict. It has also been observed that thanks to the visual modality in sign languages, the restriction of the quantifier domain can be represented in the signing space.

This thesis discusses four signs which have been identified during the study and analyzes them with respect to the issues discussed above. The glosses used for these signs in this thesis are as follows:

- (i) ALL
- (ii) ALL_OF_THOSE
- (iii) THOSE

(iv) ALL_OF_THOSE^SAME

As you can see in the list above, the first two signs have 'ALL' as a gloss or as a part of the gloss. This is mostly due to the fact that TİD signers label these with the Turkish word *hepsi* 'all'. However, these two signs differ in their phonological properties, as will be explained in Chapter 5. The third one is glossed as THOSE. Even though ALL_OF_THOSE and THOSE have the same handshape, movement, location, and orientation, they differ in the absence vs. presence of mouthing. ALL_OF_THOSE is accompanied with mouthing whereas THOSE has no mouthing. In the literature, there is not much study addressing the question whether the presence vs. absence of mouthing has a semantic contribution or not. However, Pfau and Quer (2010) state that while mouthings are not considered to be linguistically significant and to be a part of the lexical description of a sign (Hohenberger & Happ, 2001), there is a recent study by Nadolske and Rosenstock (2007) showing that mouthings contribute to the formal and semantic aspects of ASL. Similarly, I show in this thesis that presence vs. absence of mouthing can create a lexical and semantic difference, the details of which are explained throughout the thesis. Lastly, The gloss of the fourth sign in the list, ALL_OF_THOSE^SAME, aims at reflecting the meaning of the sign which can be roughly translated as 'All of those (entities in a circle, line, etc.) are the same'.

The analyses proposed in this thesis are based on the data gathered in two types of tasks: grammaticality judgement and picture description. Grammaticality judgment tasks tested for each of the first three signs listed above its syntactic position with respect to the restrictor noun, its compatibility with nominal ellipsis, its co-occurrence with plural personal pronouns and its interaction with negation. The aim of the picture description task was to elicit utterances with the sign

ALL_OF_THOSE^SAME but some of the utterances elicited also contained the other signs listed above.

Based on the findings of these tasks, I propose that ALL is a straightforward universal quantificational determiner, ALL_OF_THOSE is a complex sign having universal quantificational determiner and demonstrative components; THOSE, which differs from ALL_OF_THOSE only in mouthing, is a demonstrative, and ALL_OF_THOSE^SAME is an incorporated sign having the handshape of SAME and the movement of ALL_OF_THOSE. Therefore, out of the four signs which were initially hypothesized to express universal quantification, three do but the fourth one is simply a demonstrative.

The structure of the thesis is as follows: Chapter 2 provides a brief overview of the semantics of quantifiers in spoken languages and their syntactic distribution. Chapter 3 presents the types of quantificational determiners identified in sign languages studied up to now, the way the restriction of the quantifier domain is represented in the signing space, the use of different spatial planes, and the syntactic distribution of quantifiers. Chapter 4 explains the methodology of the study such as the testing process in the pilot and main studies, the tasks conducted, the participants and the data collection procedures. In Chapter 5, I present the findings of the thesis. Based on the findings, the results are discussed and compared with the quantifiers in other sign languages in Chapter 6. Finally, Chapter 7 concludes the thesis and provides suggestions for further research. Also note that during the initial stages of this thesis study, two signs (glossed as SOME_1 and SOME_2) that were hypothesized to express existential quantification were also studied briefly but left out of the scope of the thesis in the later stages. Since those initial analyses provided some preliminary results, I share these results in Appendix C.

CHAPTER 2

A BRIEF OVERVIEW OF QUANTIFIERS

The scope of this thesis is the universal quantifier ‘all’. However, this chapter provides a brief but more general overview of the literature on the semantics and syntax of quantifiers (quantificational determiners, to be more precise) such as *all*, *every*, *some*, *few*, *many*, and *no* based on observations in spoken languages in order to provide a background for the discussion of quantifiers in Turkish Sign Language (TİD).

Semantically, quantifiers are expressions of the quantity of the set expressed by the noun they range over (Costello et al., 2017). Syntactically, quantifiers have been analyzed either as expressions which modify nouns or as determiners that take noun phrases as their complements (Quer et al., 2017). Depending on the language, they can appear before or after the noun. In some languages, a quantifier can be separated from its corresponding noun phrase. Those quantifiers are called floating quantifiers.

There are other quantified expressions such as adverbials (“A-quantifiers” *always*, *usually*, etc.) and modals, which are outside the scope of this thesis and will not be described in this chapter. Henceforth, the term “quantifier” is used for quantificational determiners or Determiner Quantifiers (“D-quantifiers”) throughout the thesis.

In the following subsections, I first provide an overview of the semantics of different types of quantifiers and then I present a brief summary of possible syntactic distributions.

2.1 Semantics of quantifiers

A quantificational determiner expresses the quantity of the noun it modifies. It denotes a logical operator and the noun phrase it takes as its complement denotes a set of individuals that this operator ranges over. This set is the "restrictor" of the quantifier. The predicate (VP) also denotes a set of individuals. This is the "nuclear scope" of the operator. The quantifier expresses a relation between these two sets.

Quantifiers are usually categorized with reference to the logical operators they denote. Thus, the discussion below focuses first on the meanings of the basic types of quantifiers: universal (*every*, *all*), existential (*some*), numerals (*one*, *two*, *first*), and negative (*no*, *none*). Then, it continues with the discussion on the syntactic distribution of quantifiers.

2.1.1 Universal quantifiers

Examples of universal quantifiers are *every*, *each* and *all*. Consider (1) below. Here the universal quantifier *every* takes the noun phrase [child] as its complement:

- (1) [Every [child]] [cried]].

[[child]] denotes the set of children and the predicate [[cried]] denotes the set of individuals that cried. *Every* expresses that for every member of the set of children it is true that that member is also in the set of individuals that cried. This is represented schematically below in Figure 1.

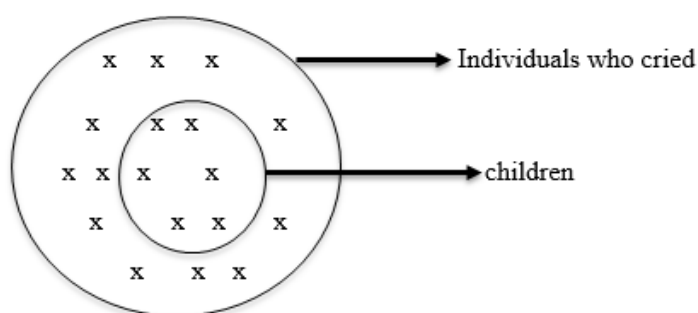


Figure 1. A schematic illustration of (1)

In other words, this sentence is true if and only if the predicate “cried” holds true of every member of the set of children.

Other typical universal quantificational determiners are *all* and *each*.

2.1.2 Existential quantifiers

Existential quantifiers express that there is at least one member of the set denoted by the noun that is also a member of the set denoted by the predicate. Typical existential quantifiers are *some*, *many*, *few*, *a few*, etc. Consider (2) below:

- (2) Some students like chocolate.

The existential quantifier *some* in this example expresses that there is at least one student who likes chocolate. This is shown schematically below in Figure 2:

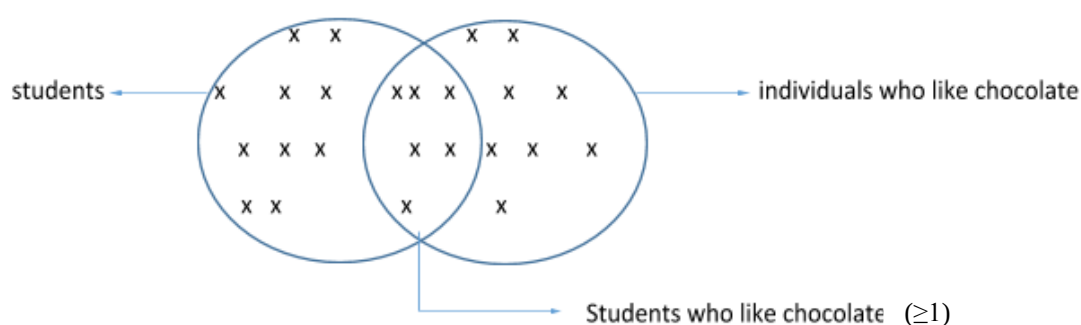


Figure 2. A possible schematic illustration of (2)

In the representation above we see that there are again two sets: the set of students (the restrictor of the quantifier) and the set of individuals who like chocolate (the nuclear scope). The quantifier *some* expresses that the intersection set of these two sets is not empty, i.e. there is at least one entity that is a member of both sets.

Other typical existential quantifiers are *some*, *many*, *few*, *a few* and etc.

Depending on the analysis, indefinite determiners such as *a* in phrases such as [*a student*] in English can also be considered existential.

2.1.3 Numerals

A numeral is a type of quantifier that expresses the number of the entities denoted by its restrictor. There are three different categories of numerals. The first one is cardinal numbers such as *one, two, and three*. The second one is ordinal numbers such as *first, second, and third*. The third category of numerals determines how a certain number is allocated to some entities such as *one by one, two at a time* or *in twos*. They are called distributive numerals. (3) illustrates these different types of numerals with examples from English:

(3) a. Cardinal numerals:

Three students saw John.

There are three books on the bookshelf.

b. Ordinal numerals:

The third chair is broken. Be careful!

c. Distributive numerals:

Please do your homework in twos or threes.

Cardinal numerals can be analyzed as a sub-type of existential quantifiers.

Consider (3a) and the quantifier phrase [*three students*]. This sentence would be true if and only there are at least three entities which are both students (i.e. belong to the set of students) and saw John (i.e. belong to the set of entities that saw John).

Generally, cardinals are the basic type of numerals and not all languages have ordinals and distributive numerals (Dryer & Haspelmath, 2013). They are derived from cardinals as they add another function to the numeral quantity such as order and distribution.

2.1.4 Negative quantifiers

Some examples of negative quantifiers are *no*, *nobody*, *nothing*, *no one* and *none*.

Negative Quantifiers express that there is no member of the set denoted by the noun that is also a member of the set denoted by the predicate. Consider (4).

(4) No student came to the party.

The negative quantifier *no* in (4) expresses that the intersection set of the set of students and the set of individuals that came to the party is the empty set. See Figure 3 below.

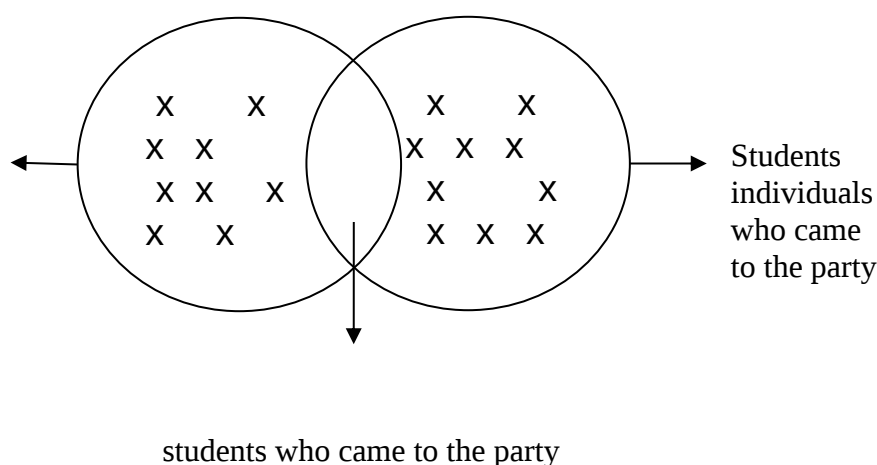


Figure 3. A schematic illustration of (4)

2.2 Syntactic distribution of quantifiers

Syntactically, the phrase constructed with a quantifier can be called a noun phrase (NP), a quantifier phrase (QP) or a determiner phrase (DP) depending on the approach adopted by the researcher. In this thesis, I assume these constituents are QPs where the quantificational determiner is the head of the phrase and it takes an NP as its complement.

Depending on the language, quantifiers can precede or follow the noun which they modify (Paperno & Keenan, 2017). For instance, in the English example (5) below the quantifier ‘some’ precedes the noun phrase *students*:

- (5) [QP Some students] didn’t come to the school.

There may be a possessive pronoun together with the quantifier in the noun phrase. When this is the situation, English has the order Quantifier-Possessive-Noun such as “all of my books”. Apart from the possessive, there may be an adjective used together with the quantifier in the noun phrase, as well. In English, the order is Quantifier-Adjective-Noun as in “all blue pencils”. As a combination, there may be an adjective, a possessive and a quantifier in a noun phrase and when all of these are used in the noun phrase, the order is Quantifier-Possessive-Adjective-Noun as in “all of my purple socks” in English.

In Swahili, on the other hand, the quantifier is flexible in terms of its position in the sentence so long as it follows its restrictor noun (Rugemalira, 2007).

In some languages, a quantifier can also float throughout the sentence rather than being in the noun phrase. In (6) below, there are examples of floating quantifiers in English:

- (6) a. The children have all read the books.
b. The students have each arrived.
c. John’s brothers have both read the book.

(Jónsson & Banfi, 2017, p. 560)

As can be seen from the examples above, the quantifiers *all*, *each* and *both* are separated from the noun phrases *the children*, *the students* and *John’s brothers* respectively, which creates a discontinuous constituent as proposed in Bobaljik (2003).

However, there are some restrictions on which a floating quantifier can appear in English. For instance, it can appear before and after an auxiliary verb (7a & 7b), between auxiliary verbs (7c) and between an auxiliary verb and an adjectival predicate (8a & 8b), but, it cannot appear after the lexical verb (7d & 7e).

- (7) a. The computers all will have been moved to the new office.
 b. The computers will all have been moved to the new office.
 c. The computers will have all been moved to the new office.
 d. *The computers will have been moved all to the new office.
 e. *The computers will have been moved to the new office all.

(Jonsson & Banfi, 2017, p. 560)

- (8) a. We were all fast asleep.
 b. The children are all healthy.

(Quirk et al., 1985, p. 382)

Another language that has floating quantifiers is Japanese. In Japanese, numeral quantifiers can float through the sentence (Miyagawa, 1989), also with some restrictions on distribution. As (9) illustrates, the numeral quantifier can occur to the right of the noun phrase if and only if the quantifier phrase containing a numeral quantifier is the subject of an unaccusative (9a) or a passive verb (9b). However, the direct object cannot intervene between a transitive subject and a numeral quantifier (9c).

- (9) a. Gakusei ga kyoo 3-nin kita.
 students NOM today 3-CL came.
 ‘Three students came today.’
 b. Yuube, kuruma ga doroboo ni 2-dai nusum-are-ta.
 last night cars NOM thief by 2-CL steal-PASS-PAST

‘Last night, two cars were stolen by a thief.’

c. ?*Gakusei ga hon o 4-nin katta.

students NOM book ACC 4-CL bought

(‘Four students bought books.’)

(Miyagawa, 1989, p. 21; p. 38)

To summarize, quantifiers express the quantity of the nouns they modify.

They are classified as universal (*every, all*), existential (*some*), numeral (*one, two, first*), and negative (*no, none*). From the syntactic point of view, languages may differ from each other in terms of the syntactic distribution of the quantificational determiner. Depending on the language, it can precede or follow the noun it modifies. Moreover, a quantifier can float throughout the sentence rather than being in the noun phrase. They are called floating quantifiers.

CHAPTER 3

A BRIEF OVERVIEW OF QUANTIFIERS

This chapter presents a brief overview of the literature on the semantics and syntax of quantifiers in sign languages. In the following subsections, I first present the types of quantifiers that have been identified so far in sign languages. After that, I discuss how quantifier domain restriction is represented in the signing space in some sign languages. Lastly, I provide an overview of possible syntactic distributions of quantifiers attested so far in sign languages.

3.1 Quantifiers in sign languages identified so far

As in spoken languages, there are different types of quantifiers in sign languages such as universal quantifiers, existential quantifiers, numerals, and negative quantifiers.¹

The existential quantifiers that have been identified in American Sign Language (ASL) are SOME/PART, SOMEONE, FEW and MANY (Abner & Wilbur, 2017). These are illustrated in (10)-(12) below. Note that there are two signs that can be translated as ‘some’: SOME/PART and SOMEONE.

(10) a. SOME/PART ELECTION GOOD, SOME/PART BAD.

‘Some elections are good, some are bad.’

b. SOMEONE DOG BITE IX₁

‘Some dog bit me.’

(Abner & Wilbur, 2017, p. 7)

There is an example of FEW below (11) and 'bl' represents brow lowering.

¹ There are other types of quantifiers identified in some sign languages such as proportional quantifiers, complex quantifiers, comparative quantifiers and type-2 quantifiers (Kimmelman, 2017).

(11) a. _____ bl/squint

FEW STUDENT READ_[reduplication] BOOK.

‘Few students read books.’

(Abner & Wilbur, 2017, p. 9)

(12) NOW CRAIG, BABYSIT MANY KID NEIGHBOR

‘Craig is babysitting many of the neighbor’s kids.’

(Abner & Wilbur, 2017, p. 9)

Russian Sign Language has also been reported to have existential quantifiers (Kimmelman, 2017). They include numerals such as ONE, TWO, THREE, etc. and quantifiers such as SOME, A.BIT, MANY₁, MANY₂, FEW, SOMEONE. Below, there are some examples of existential quantifiers in RSL (Notice that eye-brow raise is present in many of the RSL examples in the following²).

_____ er

(13) a. CLASS WINDOW WAS FEW

‘There were few windows in the class.’

b. IX-1 BUY ORANGE ONE APPLE TWO BANANA THREE LEMON
SIX.

‘I bought one orange, two apples, three bananas, and six lemons.’

(Kimmelman, 2017, p. 9)

As for universal quantifiers, Abner and Wilbur (2017) report that ASL has three distinct universal quantifiers, ALL-CIRCLE, #ALL and EACH. ALL is produced by fingerspelling of the English quantifier ‘all’ (A-L-L). Therefore, it is written with ‘#’ to show that it is a lexicalized borrowing. These three universal

² Kimmelman (2017) suggests that eye-brow raise may be marking topicalization because it is evident that when the quantifier is not adjacent to the phrase, the phrase or the rest of the constituents of the sentence apart from the quantifier is generally marked with eye-brow raise.

quantifiers differ in terms of their distributional and interpretive properties. Both #ALL and EACH can have distributive interpretations while ALL-CIRCLE is collective (see also Petronio (1995) for collectivity and distributivity in ASL). Below, there is an example of a sentence with a distributive predicate 'having long hair', as evidence for the incompatibility of ALL-CIRCLE.

- (14) #ALL/ *ALL-CIRCLE / EACH IX_{i,plural-arc} iGIRL HAIR LONG-HAIR
 'All the girls have long hair.'

(Abner & Wilbur, 2017, p. 22)

In RSL, two universal quantifiers have been identified: ALL and EVERY. EVERY involves distributivity and it can be combined with both plural and singular nouns. The following (15) provide examples:

- _____er
- (15) a. CLASS BOY ALL WAS SMART
 'All boys in the class were smart.'
- _____er
- b. EVERY BOY IX-PL DISTR-GIVE.PRESENT-1
 'Every boy gave me a present.'
- _____er
- c. EVERY SEED IX-1 WAS PLANT-DISTR GROW FLOWER
 'For every seed I planted a flower has grown.'
- d. EVERY QUESTION / EVERY QUESTION.PL
 'Every question'

(Kimmelman, 2017, pp. 11-17)

In ASL, NOTHING and NO are used as negative quantificational determiners.³ NO is traditionally glossed as NONE. They can be used with nominal overt restrictors. In the example (16) below, the restrictor is the nominal FAN:

(16) JOHN NOTHING/NO FAN BREAK

‘John did not break any (part of the) fan.’

(Wood, 1999, p.38)

In RSL, NOBODY and NOTHING are used as negative quantifiers and there is an example of NOBODY in (17) below:

_____ neg
(17) NOBODY COME NOT.

‘Nobody came.’

(Kimmelman, 2017, p. 9)

The examples above indicate that ASL and RSL have existential, universal and negative quantifiers. They also show that not all languages have the same quantifiers. Quantifiers are language specific.

3.2 Use of space in restricting the quantifier domain and use of different spatial planes

It has been shown at least for a number of sign languages that the visual modality of sign languages enables signers to restrict the domain of quantification overtly, using different components of the signing space.

Consider the example from English in (24) below:

(18) Every student enjoyed the lecture.

³ It has been observed in a number of sign languages that the signs that are glossed as complete quantifier phrases such as SOMEONE/SOMETHING, NOBODY/NOTHING etc. can also be used as quantificational determiners co-occurring with common nouns.

There are two interpretations of this sentence. One of the interpretations is more plausible. The first one is that every student in the world enjoyed the lecture, which is unlikely to happen. The second one is that every student who went to the lecture enjoyed the lecture or every student who is relevant to the discourse enjoyed the lecture, which are more plausible than the first interpretation. Then a question arises: Is there any restriction on the domain of ‘every’? In English, there is no explicit marking of the restriction of a quantifier but there are other languages which can mark the domain more explicitly. One of them is American Sign Language.

Davidson and Gagne (2014) propose that in ASL, the location of the quantifier in the signing space expresses the restriction of quantifier domain. There are two options to sign the quantifier in the structure. The first one is signing the quantifier in a specific location introduced in the discourse before to show that the set introduced in that location is the restrictor of the quantifier. This is illustrated in (19) below. In the first example, there is a set of students which is associated with the locus ‘a’ in the signing space (see the plural index sign $IX_{\text{-arc-a}}$). Therefore, when the quantifier is signed in the same locus later in the discourse, the quantifier is understood to quantify over that specific set of students. However, this is not the same for (19b). Here, the quantifier is not signed in a certain locus which is associated with the set of students. Therefore, the set which is the quantifier quantifies over is understood from the greater discourse context.

(19) a. MY STUDENT $IX_{\text{-arc-a}}$ SMART. $NONE_a/ONE_a/A-L-L_a$ SKIP CLASS

‘My students, they are smart. None/one/all of them skip(s) class.’

b. MY STUDENT SMART. $NONE/ONE/A-L-L$ SKIP CLASS

‘My students are smart. None/one/all skip(s) class.’

(Davidson & Gagne, 2014, p. 5)

Davidson and Gagne propose that different domain sizes of plurals in ASL can be expressed by varying the height of signing. Also, they note that all of the examples given with the plural, IX-arc, can be replaced by A-L-L tracing the same arc. While signing IX-arc or A-L-L in a lower level is interpreted with a restricted domain, signing them in a higher level is interpreted with a wider domain.

Different domain sizes of the existential quantifier SOMEONE in ASL can also be expressed by varying the height of signing. (20) illustrates SOMEONE signed in different vertical levels:

(20) Context: Signer is discussing her friend getting a nanny for her children.

a. IX₁ WILL FIND SOMEONE_{low}

‘I will find someone (among the usual group).’

b. IX₂ MUST FIND SOMEONE_{high}

‘You need to find someone (anyone)!’

(Davidson & Gagne, 2014, p. 5)

As can be seen from the examples, signing the quantifier in different levels vertically gives different sets as domain restrictors. If the quantifier SOMEONE is signed in a lower level, as in (20a), it is interpreted with a more restricted domain. If it is signed in a higher level, as in (20b), it is interpreted with a wider domain.

This is the same for the negative quantifier NONE as seen in (21):

(21) Context: Signer is asked if anyone in her family is deaf beside herself. She replies:

a. NONE_{low} ONLY-ONE₁

‘None, only me.’

(Davidson & Gagne, 2014, p. 8)

b. NONE_{high} ONLY-ONE₁

‘None at all, only me (not even, e.g. ancestors, distant relations)

(Davidson & Gagne, 2014, p. 8)

Davidson and Gagne argue that ASL can overtly indicate increasingly larger domains (or vice versa) by signing a quantifier increasingly higher (or lower).

For Catalan Sign Language (LSC), Barberà (2012) argues that weak quantifiers are signed in the lower or upper frontal plane while strong quantifiers are restricted in the lower frontal plane. Also, she proposes that the lower frontal plane gives contextual restriction while the upper frontal plane does not give contextual domain, as in the contrast in the English examples *few of the houses* vs. *few houses* (Barberà, 2012; Barberà, 2014). To summarize, in different sign languages, the use of space has different functions such as specifying or restricting the domain size.

Besides the domain set restriction, Abner and Wilbur (2017) found that the two universal quantifiers #ALL and ALL-CIRCLE differ from each other in use of the spatial planes in ASL. While #ALL can be signed both horizontally and vertically in the signing space, A LL-CIRCLE is limited to horizontal space, which is associated with anaphoric reference.

3.3 Syntactic distribution of quantifiers in sign languages

Similar to the variation in spoken languages, syntactic distribution of quantifiers in sign languages show parametric variation. Depending on the language, a quantifier can follow or precede its restrictor noun. Also, in some sign languages, a quantifier can occur in a position outside of the phrase that contains its restrictor, i.e. functions as a floating quantifier. In some sign languages, doubling of quantifiers has also been observed, which enables the quantifier to both precede and follow the noun.

In Russian Sign Language (RSL), quantifiers can appear in pre-nominal or post-nominal position within the QP. Kimmelman (2017) argues that pre-nominal position is the basic one while the post-nominal position is more marked. The examples of ALL in these two positions within the QP are given below in (22):

(22) a. ALL BOY LATE

b. BOY ALL LATE

‘All boys were late.’

(Kimmelman, 2017, p. 25)

In ASL, the cardinal number quantifiers are flexible within QP but generally, the quantifier is in the pre-nominal position (Abner & Wilbur, 2017), as can be seen from the examples in (23) and (24) below:

(23) a. IX_i WANT THREE BOOK.

b. IX_i WANT BOOK THREE.

‘I want three books.’

(adapted from Boster, 1996, p. 160)

(24) a. ALL-CIRCLE _iBOY TELL [SOMEONE _jGIRL] TEACHER WANT
SEE_{i+j} TWO-OF-THEM_{i+j} AFTER CLASS

‘All of the boys told some girl that the teacher wanted to see the two of them after class.’

b. [EACH _iSTUDENT] POSS_{i,plural-distributive} BOOK CL:B_{small-book}

‘The book of each student is small.’

(Abner & Wilbur, 2017, p. 28)

Liskova’s (2017) findings support Abner and Wilbur’s (2017) findings. She reports that in her ASL data, even though there are instances of post-nominal

examples, it is very rare. She provides the following examples of pre-nominal position of ALL:

(25) ALL STUDENT KNOW ANSWER.

‘All of the students know the answer.’

(___t)

(26) B-O-B REMEMBER ALL STORY.

‘Bob remembers all of the stories.’

(Liskova, 2017, p. 113)

In Taiwan Sign Language (TSL), both pre-nominal and post-nominal occurrences of quantifiers have been attested but the position depends on the quantifier. While quantifiers such as ALL, MOST, and ANY follow the noun as seen in (27), EVERY and OTHER precede the noun as in (28). Also, some quantifiers such as SOME (B) and SOME (C) can both precede and follow the noun which is shown in (29) (Lai, 2005).

(27) a. STUDENT MOST PASSIVE.

‘Most students are passive.’

b. IX_{pro3s} MONEY ALL TAKE BUY BOOK.

‘He spent all the money buying books.’

(Lai, 2005, p. 56)

(28) a. IX_{pro3s} EVERY BOOK READ FINISH.

‘He finished reading every book.’

b. OTHER STUDENT COME WILL?

‘Will other students come?’

(Lai, 2005, p. 57)

(29) a. IX_{pro3s} CLOTHES SOME (B) UNWEARABLE.

b. IX_{pro3s} SOME (B) CLOTHES UNWEARABLE.

‘He has some unwearable clothes.’

(Lai, 2005, p. 55)

After analyzing the NGT Corpus (Crasborn et al., 2008), Brunelli (2011) proposes that in NGT the quantifier precedes the noun. However, Bisnath (2017) found 2 more orders. She proposes that in NGT the quantifier can both precede and follow the noun, and it can also be doubled. Below, (30, 31, 32) shows the pre-nominal position of the quantifier and (33, 34) show the alternative positions of the quantifier in NGT.

(30) ALL CAR EXPENSIVE, NICE

‘All expensive cars are nice’

(Brunelli, 2011, p. 52)

(31) a. ALLES-A DING

all thing

‘all things’

b. MEER-A PERSON-A

more person

‘more people’

(Bisnath, 2017, p. 16)

(32) WEINIG-A DOOF-C

few deaf

‘few deaf (people)’

(Bisnath, 2017, p. 16)

(33) BOOM-B WEINIG-A

tree few

‘few trees’

(Bisnath, 2017, p. 16)

(34) WEINIG-A VARIATIE WEINIG-A

few variety few

‘little variation’

(Bisnath, 2017, p. 16)

While some sign languages are flexible in terms of the position of the quantifier with respect to the noun, as given in the examples above (ASL, RSL, NGT), some sign languages such as DGS and LIS are strict. While in DGS the quantifier must precede the noun (Pfau & Steinbach, 2006; Brunelli, 2011) as seen in (35), in LIS the quantifier must follow the noun as in (36) (Bertone, 2009; Branchini, 2007; Brunelli, 2011; Mantovan, 2017).

(35) MANY CHILD

‘many children’

(Pfau & Steinbach, 2006, p. 170)

(36) a. CAR EXPENSIVE ALL, NICE

‘All expensive cars are nice’

b. IX1 APPLE MANY EAT

‘I eat/ate many apples’

(Brunelli, 2011, p. 52)

Sometimes, the quantifier can be used without its nominal restrictor, which is an instance of nominal ellipsis. This is possible in RSL if the context enables the addressee to deduce the reference of the noun (Kimmelman, 2017):

_____er

(37) a. COME ALL

‘All [of them] came.’

____er

b. COME SOME

‘Several [of them] came.’

____er

c. HALF COME

‘A half [of them] came.’

(Kimmelman, 2017, p. 26)

ASL also licenses ellipsis of the nominal restrictors (Abner & Wilbur, 2017).

As in spoken languages, the phenomenon of floating quantifiers is also seen in sign languages such as RSL (Kimmelman, 2017), as illustrated in (38).

_____er

(38) a. BOY LATE ALL.

____er

b. BOY LATE ALL.

__er__

c. BOY ALL LATE.

‘All boys were late.’

(Kimmelman, 2017, p. 25)

In RSL, quantifiers can also be doubled. Consider (39) below. Here there are two copies of the quantifier MANY. One occurs pre-nominally as in the string MANY1 FRIEND and the other occurs after the possessive pronoun MY.

(39) MANY1 FRIEND MY MANY1 LEAVE-PL BORDER

‘Many of my friends have left the country.’

(Kimmelman, 2017, p. 23)

To summarize, there are different syntactic distributions of quantifiers in different sign languages. While in ASL, RSL and NGT, the quantifier is flexible, some sign languages can be strict in this respect, such as TSL, DGS and LIS. The phenomenon of floating quantifiers is observed in RSL whereas it is not reported for other sign languages. Also, in RSL and NGT, there is another strategy used in quantification, doubling, which is not reported for other sign languages, either.

CHAPTER 4

METHODOLOGY

In this chapter, the methodology of the tasks carried out for data collection is presented.

The study had three stages: two pilot studies, discussion of the data with the consultants, and the main study. The first pilot study, which was a picture description task, was conducted with the aim of eliciting utterances that would contain quantifiers which mean 'all', 'some' and 'none'/'no' in TID. Once I identified some signs that I hypothesized had these meanings, I set up a discussion session and asked two consultants to construct their own sentences with these signs and to discuss the contexts where they would be used. The findings of this first pilot study and the results of the discussion session led to the restriction of the thesis topic to the analysis of the signs with the meaning 'all'. Then I conducted another pilot study that involved a grammaticality judgment task. The results of these initial studies helped in determining the focus of the thesis and the methodology of data collection.

Section 4.1. gives the details of the pilot study, 4.2 describes the way the discussion session was carried out, 4.3 describes the details of the main study and Section 4.4 describes data collection.

4.1 Pilot study #1

The main aim of the first pilot study was to elicit utterances that would contain the quantifiers with the meanings 'all', 'some' and 'none'/'no'. It was based on picture description. Another aim of this pilot study was to test the suitability of the pictures to elicit these quantifiers.

Below, the participants, the task, and the procedure are discussed.

4.1.1 Participants

There were three deaf participants involved in the first pilot study; two were native, who were exposed to the language from birth, and the third one was non-native, who was exposed to the language in late childhood. All of them are active members of the Deaf community. Table 1 shows the profiles of the participants.

Table 1. The Profiles of the Participants

Participant Code	Native/Non-native	Age of exposure	Parental Hearing Status	Age	Gender	Education
PP1	native	birth	deaf	31	female	BA
PP2	native	5	deaf	34	male	High School
PP3	non-native	11	hearing	43	female	BA

The native female participant (PP1) is 52% deaf, wears a hearing aid, and has deaf parents. Thus, she has been exposed to both TİD and Turkish since birth. Since she is bilingual and experienced in TİD studies, in addition to taking part at the pilot study, she also contributed to all the data collection processes as a consultant and as an interpreter. She was one of the two mediators for the communication with the deaf participants and this way, the influence of Turkish was removed.

The native male participant is deaf and has deaf parents. He is also experienced in TİD studies.

The non-native female participant (PP3) became deaf before the age of 3 and was exposed to TİD at the age of 11. Her parents are hearing people and she is the only deaf person in the family. However, she is very fluent in TİD, very active in the Deaf community in Turkey, and also a very experienced research assistant in TİD

studies. Therefore, she was the other consultant throughout the data collection process.

4.1.2 Task

Picture description was used as an elicitation task during the pilot study. Signers were presented 37 pictures which contained two sets. One set had pictures that contained entities that were different from each other in one or more aspects such as color, height, amount or shape. The signers were expected to compare two pictures or describe one picture in terms of the related entities. There were 12 pictures in this set. The other set had pictures which were presented one by one on Microsoft Office PowerPoint slides with a True/False question written in Turkish on the top of each slide and signers were expected to give a long answer to each question related to the picture. This set has 25 pictures: 10 of them are from the same picture with a theatre scene with different questions and the rest is from Bruening's The Scope Fieldwork Project (2008, <http://udel.edu/~bruening/scopeproject/materials.html>).

4.1.3 Procedure

The participants were asked to describe to the camera what they saw in the pictures guided by the questions on top of the pictures. Each participant looked at each picture and gave the relevant answers to the questions by looking at the camera as if it was a person.

For the comparison part, they were asked questions such as 'What are the similarities between these two pictures?' or 'What is the difference between these two pictures?'. In the True/False question part, they were asked questions such as 'All people are happy. Is that true or false?', 'None of the people wear glasses. Is it true

or false? or ‘Some of the people are sitting. Is that true or false?’. The pictures below in Figure 4 and Figure 5 illustrate the comparison and True/False question tasks.

İki fotoğraf arasındaki farklılıklar nelerdir?



Ortak özellikler, farklılıklar nelerdir?



‘What are the differences between the two photos?’

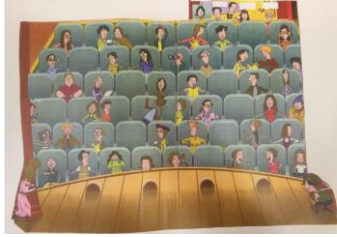
a.

‘What are the common properties and differences?’

b.

Figure 4. Comparison pictures

İnsanların hepsi mutlu. Doğru mu? Yanlış mı?



Kızların hepsi ata biniyor. Doğru mu? Yanlış mı?



‘All the people are happy. True? False?’

a.

‘All the girls are riding horses. True? False?’

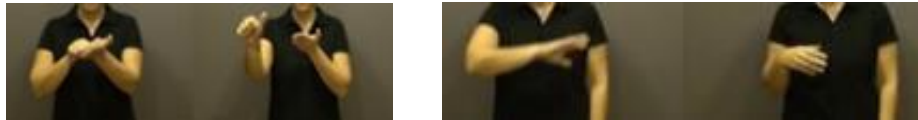
b.

Figure 5. True/false question pictures

4.1.4 Results of the pilot study

When I analyzed the elicited utterances of the signers, I identified three signs that seemed to induce universal quantification. These are henceforth glossed as ALL, ALL_OF_THOSE and ALL_OF_THOSE^SAME. I also identified two signs that seemed to function as existential quantifiers: these are glossed as SOME_1 and

SOME_2.⁴ Finally, I also identified a sign which can be translated as 'none'/'no'/'not at all' but there were very few instances of this in the elicited utterances. All of them are shown in Figure 6, Figure 7, Figure 8 and Figure 9, respectively.



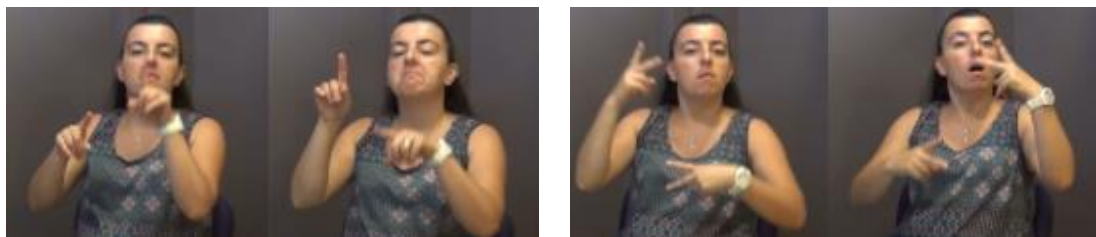
ALL

ALL_OF_THOSE

Figure 6. ALL and ALL_OF_THOSE/(THOSE)



Figure 7. ALL_OF_THOSE^SAME



SOME_1

SOME_2

Figure 8. SOME_1 and SOME_2



Figure 9. NONE

⁴ The findings related to SOME_1 and SOME_2 are presented in Appendix C.

4.2 Pilot #2 and the discussion session

To be able to prepare the main task and to understand the uses of these quantifiers, a pilot grammaticality judgment task and a follow-up discussion session were carried out with two of the consultants: PP1 and PP3. They were given sentences constructed with SOME_1, SOME_2 and NONE. Since I had hypothesized that there were three signs which functioned as a universal quantifier, the signers were asked to discuss the possible contexts of these three signs rather than being asked to complete a grammaticality judgement task. The test items were designed to identify what kinds of nouns they modify and their position inside the quantifier phrase. The consultants discussed the grammaticality of those sentences and the possible corrections of the ungrammatical sentences. These results guided the preparation of the main study.

4.3 Main study

As a result of the pilot studies and the discussion session, the research topic was narrowed to the different realizations of the universal quantifier ‘all’. Additionally, after the first pilot study and discussion session, I realized that ALL_OF_THOSE can be used with or without mouthing of the Turkish word *hepsi* ‘all’. When I examined the results of the pilot study and the discussion session, I concluded that it was not optional. Therefore, in the main study, the sign which is glossed as THOSE was added to the testing items. In order to elicit the natural production of these signs and to receive grammaticality judgements from more signers, two tasks, namely, picture description and grammaticality judgement tasks, were conducted with more signers. The materials for the picture elicitation task and the test items for the grammaticality

judgment task as well as the methodology for both tasks were modified based on the results of the pilot studies and the discussion session.

The following is the list of the signs that I investigated in this thesis:

- (i) ALL
- (ii) ALL_OF_THOSE
- (iii) THOSE
- (iv) ALL_OF_THOSE^SAME

4.3.1 Participants

Eight participants took part in these tasks. Four of them were native signers while the other four were non-native signers. Native signers are exposed to the language from birth while non-native signers are exposed to the language in the later stages such as childhood or adulthood. The reason why I worked with these two groups was to see whether their use of the quantifiers as well as their grammaticality judgments differed based on when they were exposed to TİD.

It has been known in the literature that there is a difference between grammaticality judgements provided by native signers/speakers and non-native signers/speakers because the age of acquisition plays an important role in language performance (Penfield & Roberts, 1959; Emmorey, 2002). The performance between an individual who is exposed to a language from birth and an individual who is exposed to that language after the critical age are not equal to each other, which causes linguistic variation between native and non-native sign language speakers in adulthood as well (Mayberry & Eichen, 1991; Slobin et al., 2003).

Table 2 shows the profiles of the participants in the main study.

Table 2. The Profiles of the Participants in the Main Study

Participant code	Native/ Non-native	Age of exposure	Parental Hearing Status	Gender	Age	Education
P1	native	birth	deaf	female	27	High School
P2	native	birth	deaf	female	28	High School
P3	native	birth	deaf	female	26	High School
P4	native	birth	deaf	male	24	High School
P5	non-native	7	hearing*	female	41	High School
P6	non-native	5	hearing	male	45	High School
P7	non-native	12	hearing	female	35	BA
P8	non-native	7	hearing*	male	43	BA

* Apart from the spouse, all of the family are deaf.

All of the participants are active in the Deaf community in Istanbul. While some of them are working with hearing people, some others are unemployed.

4.3.2 Tasks

Below, two tasks conducted for the thesis will be described.

4.3.2.1 Elicitation of data with picture description

After the pilot study, the picture description task underwent an update: both the instructions written in Turkish and the True/False questions were removed from the slides. Instructions written in Turkish were replaced by instructions in TİD to eliminate all influence of Turkish, and the True/False questions were removed to eliminate biases they might induce because the True/False questions had to have the

quantifier structures such as ‘All of the people are looking at the stage. Is it true or false?’.

New pictures that would trigger comparison were added to the materials. The latest version had 31 pictures in total: 16 pairs of pictures for comparison and 15 single pictures for description. The main aim of the description of the single pictures in which the objects share at least one property was to find out whether ALL_OF_THOSE^SAME is used commonly by the signers or not. Below, some examples from the picture description task are given. Consider the pictures in Figure 10 and Figure 11.

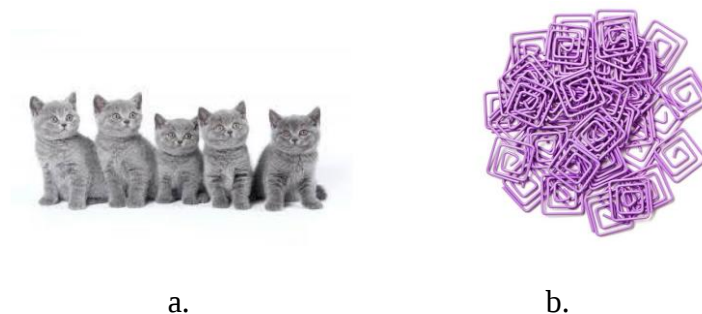


Figure 10. Single pictures

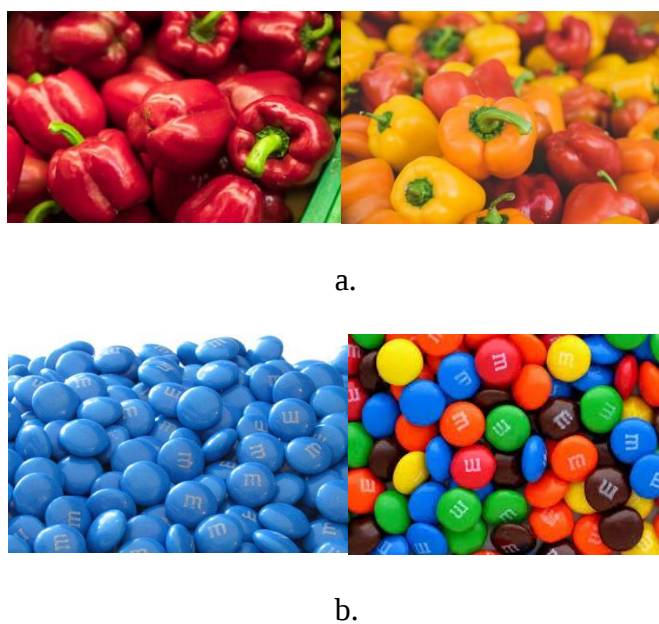


Figure 11. Pairs of pictures

The entities in these pictures look identical. In Figure 10a, for instance, I expected the signers to describe the picture with utterances such as "All of the kittens are grey." or "There are grey kittens. All are the same.". The entities in the picture pairs in Figure 11, on the other hand, share many properties but they are usually different in one or two properties. In the pictures in Figure 11b, for instance, all the entities are chocolate candies. Whereas in the picture on the left all of them are blue, in the one on the right the candies are of a variety of colors. So I expected the signers to produce utterances such as "In the picture on the left, all of the chocolate candies are blue but in the picture on the right, some of them are red, some of them are orange, and some of them are yellow.". The instructions were given by a native signer in TID and recorded. The video was inserted into the slide. In the video, the participants were asked to describe what they saw in the pictures such as differences and similarities in terms of colors, sizes, shapes, etc.

Even though the initial aim of the picture description task was to elicit utterances constructed with ALL_OF_THOSE^SAME, participants produced all the other signs investigated in this thesis during these tasks. The details are explained in Chapter 5.

4.3.2.2 Grammaticality judgement task

In the grammaticality judgment task, there were two aims: to find out the possible syntactic positions of the three signs investigated and identify the nature/category of them. Therefore, there were four types of test items. All the sentences were given in context rather than in isolation.

Conveying the targeted meaning and eliminating the other possibilities were the key reasons for providing the sentences with contexts.

Type-1 test items aim at examining the order of ALL, ALL_OF_THOSE and THOSE, and the noun as well as the compatibility of these signs with the (un)countability of the noun. All these signs will be represented as [SIGN], henceforth.

Below, one of the examples of Type-1 test item is shown, which has a countable noun, FRIEND, preceding [SIGN]. See Section 5.2 for more detailed information on Type-1 test items.

- (40) Context: I haven't gotten married yet. I'm the only single person among my friends. My friends are married.

Test Item: FRIEND [SIGN] CHILD HAVE

'All of my friends have children.'

Type-2 test items aim at examining the possibility of nominal ellipsis. One of the examples of Type-2 test items is shown in (41), which has a countable elided noun 'friends'. See Section 5.2 for more detailed information on Type-2 test items.

- (41) Context: I haven't gotten married yet. I'm the only single person among my friends. My friends are married.

Test Item: [SIGN] CHILD HAVE

'All (of them) have children.'

Type-3 test items aim at finding out the use of plural personal pronouns with [SIGN]. In this type of test items, the order was also taken into consideration. (42) presents one of the examples of Type-3 test items, in which the first person plural pronoun, IX_{1pl} 'we', precedes [SIGN]. See Section 5.3 for more detailed information on Type-3 test items.

- (42) Context: There is a school trip. We were supposed to notify teachers whether we're going or not. Therefore, we talked to my friends and decided to go.

Test Item: THEREFORE IX_{1pl} [SIGN] LIST NAME WRITE. TRIP GO.

‘So, we all wrote our names to the list. We are going to go to the trip.’

Type-4 test items aim at testing the interaction of [SIGN] with negation. (43) illustrates Type-4 test items with [SIGN] in a negative sentence. See Section 5.4 for more detailed information on Type-4 test items.

(43) Test Item: STUDENT [SIGN] COME NOT. UNIVERSITY STUDENT COME. HIGH SCHOOL STUDENT COME NOT.

‘Not all students came. University students came. High school students didn’t come.’

Each utterance includes the test item and the context, which precedes or follows the test item. All of the contexts and utterances were signed by the native consultant (PP1) and they were recorded with a camera so that each participant would see the same utterance. All of the participants watched the utterances and judged them one by one for grammaticality. If they found an utterance ungrammatical, they were asked to correct the sentence and all of the responses given by the participants were also recorded. To make sure that the context utterances were natural and grammatical, the native consultant checked them and made changes if necessary.

There were 147 utterances (context+test item) in total. 18 of them were fillers including grammatical and ungrammatical utterances. The rest was testing ALL, ALL_OF_THOSE and THOSE. See Appendix A for all the test utterances. However, please note that although I tried to be consistent in the test items in all aspects, there were some inconsistencies. One of them was having [SIGN] either in subject or object position without paying attention to the countability of the accompanying noun, which means that [SIGN] with countable nouns were tested in the subject

position and [SIGN] with uncountable nouns were tested in the object position. The second was that there was an imbalance in the number of the test items with countable nouns and with uncountable nouns.

4.3.3 Procedure

The picture description task lasted approximately 15 minutes per participant and this time, the participants described pictures to the consultants rather than directly to the camera, which made the task much more interactive and natural from the point of the participant. Also, the instructions for comparison pictures and single pictures were recorded by the native consultant and shown to the participants in the beginning of the task to achieve consistency. Grammaticality judgement items were divided into two sets, and these sets were interspersed with picture description items to minimize mental fatigue and loss of focus.

During the grammaticality judgment task sessions, one consultant was also present in the recording area. The participant conveyed his/her judgements to the consultant, and when the participant found an utterance/test item unacceptable, the consultant asked him/her how she/he could correct the utterance. There were two consultants (PP1 and PP3) and each worked with four participants.

4.4 Data collection

SONY Handycam cameras were used during the data collection and the data were recorded in HD format. The cameras were set in three different angles, one capturing only the participant, one capturing both the consultant and the participant from a cross angle, and the other capturing the whole scene. The data were stored in external hard drives and the picture description videos were converted to mp4 format on

Adobe Premier Pro CS6. Related parts of the picture description tasks were analyzed in Adobe Premier.

CHAPTER 5

ALL, ALL_OF_THOSE, THOSE:

PHONOLOGICAL, SYNTACTIC, AND SEMANTIC PROPERTIES

As a starting point, my hypothesis was that these three signs have a universal quantification meaning and the tasks were designed to find out whether they differ in their syntactic distribution and use. The results showed that even though they share some properties, they also differ from each other in certain respects, hence, the different glosses.

This chapter first describes the phonological properties of ALL, ALL_OF_THOSE and THOSE. Sections 5.2 to 5.7 present the results obtained from the grammaticality judgement and picture description tasks regarding the questions whether all of these signs function as determiners, whether they can be used with both countable and uncountable nouns, and whether they can occur with elided nouns as well as the question regarding their lexical categories and morphological make-up, namely, whether they contain morphemes expressing universal quantification, pronouns or demonstrative determiners. 5.8 turns to the use of signing space, and shows how it is used to express the restrictor of ALL_OF_THOSE and the antecedent of THOSE.

5.1 Phonological properties of ALL, ALL_OF_THOSE and THOSE in Turkish Sign Language

In this section, for each sign, I indicate the handshape, the orientation of the hand, the location of articulation in the signing space and the direction of the movement of the hands. Before describing these properties for each sign, let me mention in advance

that whereas the location of the articulation of ALL_OF_THOSE and THOSE changes depending on the abstract locus of the entities they quantify over, it remains fixed for ALL. These will be explained in more detail below.

5.1.1 ALL

ALL is a two-handed sign. The weak hand has the flat handshape (👐) and the dominant hand has the thumb handshape (👉). The dominant hand's orientation is towards the weak hand and the weak hand is facing upwards. The dominant hand touches the palm of the weak hand and moves outwards in a straight path. Below, the articulation of ALL is shown in Figure 12.



Figure 12. ALL

This sign is almost always articulated in central space, i.e. in the area in front of the signer's chest, regardless of the (abstract) locations of the entities it quantifies over. We will see in the later sections that the other signs differ in this respect.

5.1.2 ALL_OF_THOSE and THOSE

Below, ALL_OF_THOSE and THOSE are described together since the only difference between these two signs is the presence vs. absence of mouthing. Below, Figure 13 shows the articulation of ALL_OF_THOSE.



Figure 13. ALL_OF_THOSE

ALL_OF_THOSE is a one-handed sign. It has the open five handshape (🖐️) (Kubus, 2008; Taşçı, forthcoming). Its articulation involves a (semi-)circular movement in front of the signer's body in the sagittal plane. The hand is facing downward. This sign is articulated with mouthing, but the mouthed Turkish lexical item varies. Sometimes it is the mouthing of the entire Turkish word *hepsi* 'all' and sometimes only its first syllable *hep*-.⁵

THOSE is a one-handed sign, as well. The handshape, movement, location and the orientation are the same as of ALL_OF_THOSE. Below, Figure 14 shows the articulation of THOSE.



Figure 14. THOSE

The difference between this sign and ALL_OF_THOSE is that this sign does not have mouthing. However, there may be spreading of the mouthing of the previous or following signs, as can be seen in the figure above where the signer mouths the Turkish word *ev* 'house'.

⁵ At a later stage of my thesis study, I noticed that ALL_OF_THOSE is sometimes articulated with the mouthing of the Turkish plural suffix [ler] / [lar], as well. Since my testing items do not include this alternation, I focus on ALL_OF_THOSE which is articulated with the Turkish word *hepsi* 'all'. Whether or not ALL_OF_THOSE with the mouthing [ler] / [lar] is a different sign should be investigated in future research.

The reason why I do not analyze these two signs as one sign with optional mouthing is that during the discussions with the consultants, I had the impression that they are not always interchangeable. So, I designed tasks to identify their syntactic and semantic properties which I discuss in the following sections.

Recall that ALL can only be signed in the central space. Even when there are two pictures for the signers to describe and compare, ALL is again signed in the central. This contrasts with the utterances with ALL_OF_THOSE and THOSE. In the tasks, when there were two pictures to compare, the signers divided the signing space into two: ipsi-lateral signing space and contra-lateral signing space and signed ALL_OF_THOSE and THOSE in one of these parts of the signing space. If there was nothing to compare and contrast, in the case of describing a single picture, these signs were also signed in the central area, which is the default signing space.

More specifically, if the set of the plural entities that the THOSE component in ALL_OF_THOSE and THOSE refer to is signed in a specific location (ipsi- or the contralateral area), these signs are signed in that same location in the signing space (see also Davidson & Gagne, 2014 for a similar observation for A-L-L in ASL). Consider the pictures in Figure 15a and Figure 15b and the descriptions made by the signers in (44a and 44b) below to see the location agreement of both the restrictor and ALL_OF_THOSE:



a.

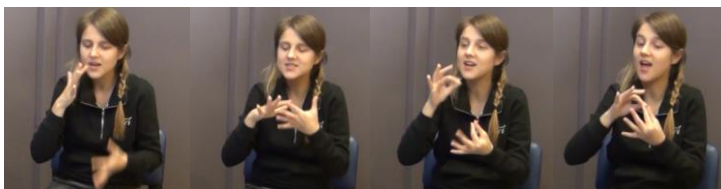


b.

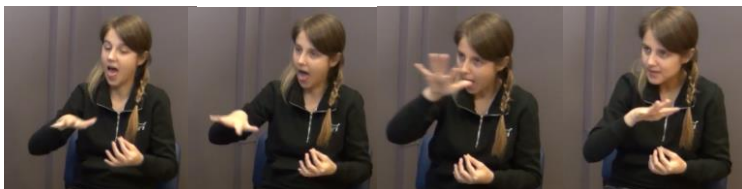
Figure 15. Stimulus pictures with countable nouns (girls and chocolates)

(44)

a.



PERSON_a



/hepsi/

ALL_OF_THOSE_a



CHAT.WITH.EACH OTHER

‘All of those people chat with each other’

b.



...OTHER IX(loc)_a SAME CHOCOLATE. ONE BROWN DARK



_____ /hepsi/

CL:Choc._bar_a BLACK ALL_OF_THOSE_a SAME

LH: CL:Choc._bar_a.....

‘In the other picture, there, the chocolates are the same. There is one dark brown chocolate bar, all of those are the same. (The other ones are mixed and different.)’

In Figure 15a there is a single picture and in Figure 15b there are two pictures for the signers to describe. (44a) is the description of the picture in Figure 15a. Since here the signer does not have to compare two pictures, she signs the utterance in the default signing space, which is the central area. Thus, she also signs ALL_OF_THOSE in the central area.

(44b) involves the comparison of two pictures as shown in Figure 15b. Here, the signer divides the signing space into two and assigns the description of the

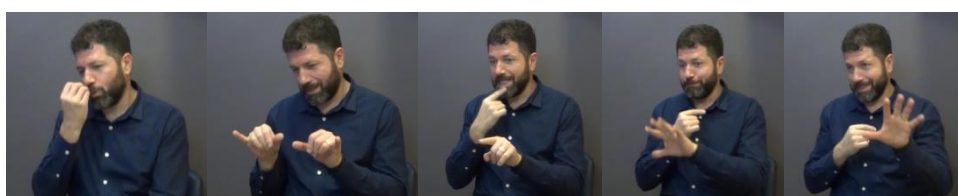
picture on the right to the ipsi-lateral area. So, she first points to that area, $IX(loc)_a$, to show this assignment. Then, she signs the classifier which refers to CHOCOLATE (CL:Choc._bar), and which is the restrictor of ALL_OF_THOSE, in the same location as the locative index sign $IX(loc)_a$. Then, she signs ALL_OF_THOSE also in the same location as the locative index sign $IX(loc)_a$ and the circular movement is articulated above the non-dominant hand that has been holding the fragment of the classifier representing ‘chocolate bar’ (CL:Choc._bar).

Consider the picture in Figure 16 and the description made by the signer in (45) below to see the location agreement of both the plural antecedent and THOSE:

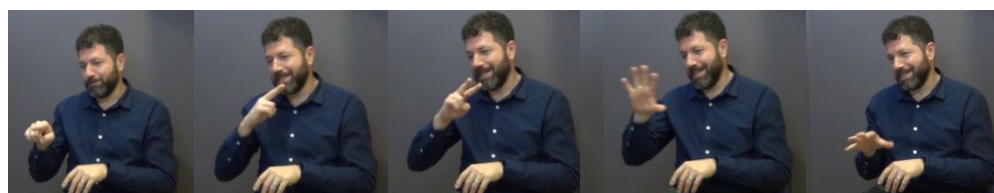


Figure 16. A pair stimulus pictures with countable nouns (roses)

(45)



R.H:ROSE SAME. RED THOSE_a.
L.H: $IX(loc)_a$

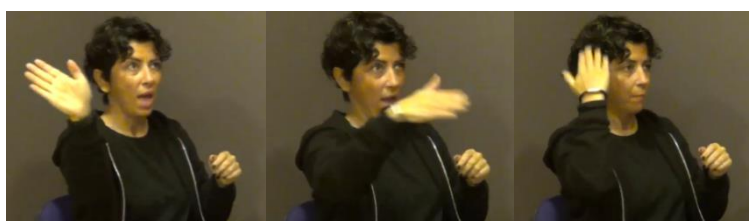


$IX(loc)_b$ COLORFUL THOSE_b

‘Roses are same. There, those are red. There, those are colorful.’

There are two pictures for the signer to compare and contrast. Again, the signer divides the signing space and assigns the description of each picture to the ipsi-lateral and the contra-lateral components. The signer first introduces the antecedent ROSE. Each picture contains a different set of roses. So, we can assume that there are two antecedents of two occurrences of THOSE. The signer sets the locations of these two antecedents in the signing space with locative index signs $IX(loc)_a$ and $IX(loc)_b$. After that, he signs the two occurrences of THOSE, namely, $THOSE_a$ and $THOSE_b$, in the same locations with the antecedents. I discuss this in more detail in Section 6.4.

Another difference between ALL and ALL_OF_THOSE is the direction of movement. It is flexible with ALL_OF_THOSE whereas it is not with ALL. For instance, if the signer talks about all the walls in a room, s/he can sign ALL_OF_THOSE by moving his/her hands through the (imaginary) walls rather than signing ALL_OF_THOSE in the central space as can be seen in the example in Figure 17.



_____ /hepsi/
(WALLS) ALL_OF_THOSE



PAINT

Figure 17. The direction and location of the movement of ALL_OF_THOSE

5.2 Syntactic distribution and properties of ALL and ALL_OF_THOSE

It is known that quantificational determiners (as well as adjectives, numerals and wh-determiners) can precede or follow the nouns they modify in many sign languages (See Chapter 3; Abner & Wilbur, 2017; Liskova, 2017; Kimmelman, 2017; Brunelli, 2011). Thus, one of my research questions was whether the signs I was investigating had fixed or flexible syntactic positions in the quantifier phrase. Moreover, both ALL and ALL_OF_THOSE are translated by the signers as *hepsi* ‘all’ into Turkish even though they have different phonological properties. This made me wonder whether they have semantic differences, as well. ALL is clearly not a pointing sign and it is signed only in the central space. However, given its handshape, (all five fingers open ) , ALL_OF_THOSE could potentially be a pointing sign. This led me to the question whether there is a countability difference between these signs. A possible result could be that ALL is only accepted with uncountable nouns whereas ALL_OF_THOSE is accepted with countable nouns. These research questions are summarized below:

(i) Do ALL and ALL_OF_THOSE function as determiners?

(ia) If they do, do they have to occur to the left or to the right of the noun they modify?

(ib) If they do, does the countability of the head noun have an effect on the occurrence of ALL and ALL_OF_THOSE?

In order to find out the syntactic distribution of the signs investigated, a number of grammaticality judgement tasks have been conducted, and the results are compared with the data elicited with the picture elicitation tasks. However, in the picture description task, there were only countable items. Therefore, the comparison

of grammaticality judgement results and picture descriptions was made only for ALL and ALL_OF_THOSE having countable restrictors.

Table 3 below shows the test item templates used in the grammaticality judgment task. These templates are part of Type-1 test items in my study.

Type-1 aims to investigate whether the positions of ALL and ALL_OF_THOSE are flexible in the noun phrase as a quantifier and whether the countability of the noun has an effect on the quantifier use. Therefore, these signs are used with their nominal restrictors, both countable and uncountable, in the same phrase both in the pre-nominal and the post-nominal position.

Table 3. Type-1 Testing Item Template for Countability and Order

Context:	I haven't gotten married yet. I'm the only single person among my friends. My friends are married.
Test item template_1 (CountN - SIGN order)	FRIEND [SIGN] CHILD HAVE. 'All of my friends have children.'
Test item template_2 (SIGN -CountN order)	[SIGN] FRIEND CHILD HAVE. 'All of my friends have children.'
Context:	I was very hungry. I went into the kitchen. I saw soup on the countertop.
Test item template_3 (UncountN - SIGN order)	SOUP [SIGN] EAT. 'I ate all of the soup.'
Test item template_4 (SIGN -UncountN order)	[SIGN] SOUP EAT. 'I ate all of the soup.'

In the production of these test items, the [SIGN] slot in the template was filled with ALL and ALL_OF_THOSE. In total, there were 8 contexts, having 4 countable and 4 uncountable nouns, preceding and following the quantifier. Thus, as a result, we had 48 test items produced with this kind of template. See Appendix A for all the contexts.

In the following subsections, I present the results for ALL and ALL_OF_THOSE, in relation to the research questions above.

5.2.1 Countability of the nominal restrictor and the position of the quantifier

In this section, the findings of the picture description tasks and grammaticality judgment tasks related to the effect of the countability of the restrictor noun in the QP and the position of the quantifier with respect to the restrictor noun are discussed.

Both the results of the grammaticality judgment tasks and picture description tasks showed that ALL and ALL_OF_THOSE are compatible with both countable and uncountable nouns, and they can occur pre-nominally or post-nominally.

Now, let me explain the results in detail for each of these signs. As stated above, ALL is compatible with both countable and uncountable nouns regardless of the order with respect to the noun, namely the restrictor, according to both grammaticality judgement tasks and picture description tasks.

(47) below illustrates the structures the participants found grammatical in this context:

Context: I had a very important job. I had to work on the computer.

(47) a. CountN- Quantifier order:

[TI_2]: OFFICE COMPUTER ALL BROKEN.

‘All the computers in the office were broken.’

b. Quantifier - CountN order:

[TI_18]: OFFICE ALL COMPUTER BROKEN.

‘All the computers in the office were broken.’

The first table (Table 4) below shows the distribution of the grammaticality judgements of native and non-native signers to the test items and the second table

(Table 5) shows the general results on the countability and order. As explained in Section 4.3.1., there were 4 native and 4 non-native signers. The ratios show the number of signers that judged the utterances as "grammatical".

Table 4. ALL: The Grammaticality Judgements for Countable Nouns and Order Per Test Item

Test Items	Test Item Types	Native	Non-native
TI_1	CountN ALL	4/4	4/4
TI_2	CountN ALL	4/4	4/4
TI_3	CountN ALL	4/4	4/4
TI_4	CountN ALL	4/4	4/4
TI_17	ALL CountN	4/4	3/4
TI_18	ALL CountN	4/4	4/4
TI_19	ALL CountN	4/4	4/4
TI_20	ALL CountN	4/4	4/4

Table 5. ALL: General Results on Countable Nouns and Order

ALL	Countable			
	Noun-Qua		Qua-Noun	
	Nat	non-nat	nat	non-nat
	16/16	16/16	16/16	15/16

As the tables show, both the native and the non-native participants found these sentences grammatical. Thus, we can conclude that TID allows ALL to occur with countable nouns and it can precede or follow them. This will be discussed further in Chapter 6.

The data elicited in the picture description tasks also support the results of the grammaticality judgment tasks. There are twelve descriptions containing the determiner ALL. Three of them were given by native participants and nine of them

were given by non-native participants. Below, the pictures in Figure 18 and 19 and the descriptions elicited from the signers (48) and (49) are presented:



Figure 18. A stimulus picture with countable nouns (women)

(48) TREE THERE_IS. WOMAN THIRTY DRESS ALL WHITE CL:circle

‘There is a tree. All of the dresses of thirty women in a circle are white.’



Figure 19. A stimulus picture with countable nouns (dogs)

(49) DOG ALL SAME BUT ONE DIFFERENT.

‘All of the dogs are the same but one of them is different.’

What we see in (48) and (49) is that in the elicited data, as well, ALL co-occurs with countable nouns (DRESS and DOG) and it occurs post-nominally. However, it is worth noting that even though the participants, without any exception, accepted the pre-nominal position for ALL in the grammaticality judgment tasks, in

the elicited data, I did not find an instance of this. Nearly all of the signers used ALL post-nominally while describing the pictures.

The findings related to uncountable nouns and ALL are also similar. Consider (50) below given in this context:

Context: I was very hungry. I went into the kitchen. I saw soup on the countertop.

(50) a. Uncountable noun-Quantifier order:

[TI_9]: SOUP ALL ATE.

‘I ate all of the soup.’

b. Quantifier-uncountable noun order:

[TI_25]: ALL SOUP ATE.

‘I ate all of the soup.’

The tables 6 and 7 below show the distribution of the grammaticality judgements of native and non-native signers to the test items and the general results on the countability and order.⁶ As explained in Section 4.3.1., there were 4 native and 4 non-native signers. The ratios show the number of signers that judged the utterances as grammatical.

⁶ All of the test items were found grammatical by both native and non-native participants, except for two sentences. Interestingly, these test items are contrastive in terms of the determiner-head order. This may be because of a distraction during the testing. Another reason might be that the determiner-head order is more unmarked for the non-native signers whereas for the native signers the situation is just the opposite.

Table 6. ALL: The Grammaticality Judgements on Uncountable Nouns and Order per Test Item

Test Items/Results	Type of the TI	Native signers	Non-Native signers
TI_9	UncountN ALL	4/4	4/4
TI_10	UncountN ALL	4/4	4/4
TI_11	UncountN ALL	3/4	2/4
TI_12	UncountN ALL	4/4	4/4
TI_25	ALL UncountN	4/4	4/4
TI_26	ALL UncountN	4/4	4/4
TI_27	ALL UncountN	4/4	2/4
TI_28	ALL UncountN	4/4	4/4

Table 7. ALL: General Results on Uncountable Nouns and Order

ALL	Uncountable			
	Noun-Qua		Qua-Noun	
	nat	non-nat	nat	non-nat
	15/16	14/16	16/16	14/16

To summarize, these results show that TID allows the universal quantifier ALL to precede or follow a countable or an uncountable noun and this supports the proposal that ALL is similar to the universal quantifier *all* in English. If it were accepted only with the countable nouns, it would raise the question whether this sign is used to express ‘each’ or ‘every’.

As a summary, ALL is accepted by both native and non-native participants as a determiner regardless of its position with respect to the noun and the countability of the noun.

Turning to the other sign investigated, both the results of grammaticality judgement and picture description tasks showed that ALL_OF_THOSE can also be

used as a quantificational determiner of a countable and uncountable noun and it can occur pre-nominally or post-nominally.

(51) below illustrates the structures the participants found grammatical in this context:

Context: My sibling was going to get married. We made a lot of preparations for her wedding.

_____ /hepsi/

(51) [TI_8a]: RELATIVE ALL_OF_THOSE CAME.

‘All the relatives came.’

_____ /hepsi/

[TI_24a]: ALL_OF_THOSE RELATIVE CAME.

‘All the relatives came.’

Below, there are two tables (Table 8 and Table 9). The first table summarizes the general results on the countability and order. The ratios show the number of signers that judged the utterances as grammatical.

Table 8. ALL_OF_THOSE: The Grammaticality Judgements for Countable Nouns and Order per Test Item

Test Items	Test Type	Native Participants	Non-native Participants
TI_5a	CountN ALL_OF_THOSE	4/4	4/4
TI_6a	CountN ALL_OF_THOSE	4/4	4/4
TI_7a	CountN ALL_OF_THOSE	4/4	3/4
TI_8a	CountN ALL_OF_THOSE	4/4	3/4
TI_21a	ALL_OF_THOSE CountN	4/4	4/4
TI_22a	ALL_OF_THOSE CountN	4/4	3/4
TI_23a	ALL_OF_THOSE CountN	4/4	4/4
TI_24a	ALL_OF_THOSE CountN	4/4	4/4

Table 9. ALL_OF_THOSE: General Results on Countable Nouns and Order

ALL_OF_THOSE	Countable			
	Noun-Qua		Qua-Noun	
	Nat	non-nat	nat	non-nat
	16/16	14/16	16/16	15/16

According to the grammaticality judgement results, TĪD allows ALL_OF_THOSE to occur with countable nouns and the order is flexible.

The data elicited in the picture description tasks include eight descriptions containing the determiner ALL_OF_THOSE and support the results of the grammaticality judgement tasks. Six of them were given by native participants and two of them were given by non-native participants. Below, pictures in Figure 20 and 21 and the descriptions elicited from two native signers (52) and (53) are shown:



Figure 20. A stimulus picture with countable nouns (girls)

 /hepsi/

(52) PERSON ALL_OF_THOSE EACH OTHER LOOK. WOMAN CROSS ARMS. OTHER SCRATCH HEAD. DIFFERENCE EXIST.

‘All the people are looking at each other. (Some) women are crossing their arms. Another one is scratching her head. There are differences.’



Figure 21. A stimulus picture with countable nouns (cups)

_____ /hepsi/

(53) OTHER. CUP ALL_OF_THOSE MANY COLORFUL.

‘As for the other picture, all of the cups are colorful.’

(52) and (53) show that ALL_OF_THOSE co-occurs with countable nouns (PERSON and CUP) in the post-nominal position. However, it should be noted that although in the grammaticality judgement task both pre-nominal and post-nominal positions were accepted by the participants, in the data elicited with pictures, I did not find any example of ALL_OF_THOSE in the pre-nominal position. This is parallel to the findings reported for ALL above. Also, it must be pointed out that native participants used ALL_OF_THOSE more than non-native participants while describing the pictures.

Let us now turn to ALL_OF_THOSE and uncountable nouns. Testing items that were found grammatical are illustrated below in (54):

Context: There was a lot of work to do at home. My mother went out.

(54) a. Quantifier follows the uncountable noun:

_____ /hepsi/

[TI_{16a}]: IX_{3a} COME UNTIL WORK ALL_OF_THOSE DO.

‘I did all the work until she came back.’

b. Quantifier precedes the uncountable noun:

_____ /hepsi/

[TI_32a]: IX_{3a} COME UNTIL ALL_OF_THOSE WORK DO.

‘I did all the work until she came back.’

Below, Table 10 and Table 11 show the grammaticality judgements of native and non-native signers and the general results on the uncountability and order.

Table 10. ALL_OF_THOSE: The Grammaticality Judgements for Uncountable Nouns and Order per Test Item

Test Items	Test Type	Native Participants	Non-native Participants
TI_13a	UncountN ALL_OF_THOSE	4/4	2/4
TI_14a	UncountN ALL_OF_THOSE	4/4	4/4
TI_15a	UncountN ALL_OF_THOSE	4/4	2/4
TI_16a	UncountN ALL_OF_THOSE	4/4	3/4
TI_29a	ALL_OF_THOSE UncountN	3/4	2/4
TI_30a	ALL_OF_THOSE UncountN	3/4	2/4
TI_31a	ALL_OF_THOSE UncountN	4/4	4/4
TI_32a	ALL_OF_THOSE UncountN	4/4	4/4

Table 11. ALL_OF_THOSE: General Results on Uncountable Nouns and Order

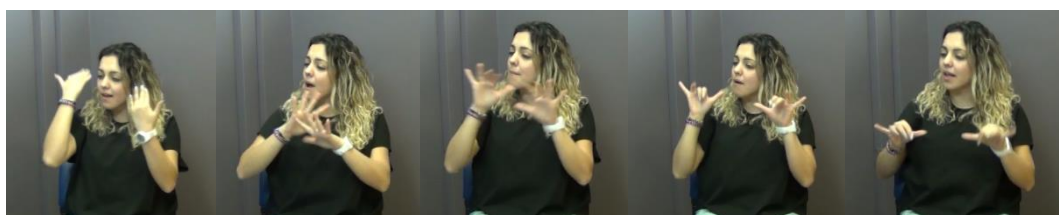
ALL_OF_THOSE	Uncountable			
	Noun-Qua		Qua-Noun	
	Nat	non-nat	nat	non-nat
	16/16	11/16	14/16	12/16

Compared to the previous results, the results here are slightly less consistent among the participants. According to the judgements given by the native participants, ALL_OF_THOSE is accepted with uncountable nouns regardless of the order. However, the non-native participants show variation in their judgments regarding the

acceptability of uncountable nouns with the quantifier, regardless of their position with respect to each other. One may conclude that for non-native signers even though ALL_OF_THOSE is easily accepted with a countable noun, its occurrence with uncountable noun is more marked.

In the data elicited in the picture description tasks, there is only one instance of ALL_OF_THOSE with an uncountable noun, and in that example, the quantifier again follows the noun, parallel to the previous findings in the elicited data. The picture is the same with Figure 15a. Below, the description elicited from a native signer (55) is shown:

(55)



_____ /hepsi/

... .HAIR

ALL_OF_THOSE

SAME. ...

‘All hair is the same.’

It is also worth noting that this description includes ALL_OF_THOSE as a symmetrical two-handed sign. The reason could be that ALL_OF_THOSE assimilates into the preceding sign HAIR in terms of the number of hands being used. This is the only example in my data where ALL_OF_THOSE is signed with two hands.

To summarize, ALL_OF_THOSE is accepted with both countable and uncountable nouns by native participants no matter what the order is, while non-native participants accepted ALL_OF_THOSE with countable nouns more than with

uncountable nouns, regardless of the order. All these results indicate that ALL_OF_THOSE can function as a quantificational determiner.

5.2.1.1 Interim summary

Below, the results will be summarized for each sign one by one, including a discussion of the grammaticality judgments by the two participant groups.

ALL: There is no difference between the responses of the two types of signers. Both native and non-native participants accept its use as a determiner regardless of the order with respect to the noun and the countability property of the noun. Also, the grammaticality judgements were supported by the elicited data in the picture description task. Both native and non-native participants used ALL while describing the pictures. It seems that ALL functions as a (quantificational) determiner.

ALL_OF_THOSE: Generally, this sign is also accepted as a determiner in both the pre-nominal and the post-nominal position by both native and non-native participants. However, for the non-native participants, its occurrence with an uncountable noun seems to be more marked than its occurrence with a countable noun, regardless of the order. Also, picture description task showed that both types of signers used ALL_OF_THOSE while describing the pictures. Contrary to the use of ALL in descriptions, native participants used ALL_OF_THOSE in more instances than the non-native participants. It seems that ALL_OF_THOSE also functions as a (quantificational) determiner.

When the results of native and non-native signers are examined, it is clear that the use of ALL_OF_THOSE and uncountable nouns are consistent among native participants while there is more variation among non-native signers. For picture

description task, I do not know whether it is significant or not but native signers used ALL_OF_THOSE more frequently than non-native signers.

5.3 Syntactic distribution and properties of THOSE

In this section, I show that THOSE is not a universal quantifier but a plural demonstrative determiner/pronoun.

The results of the grammaticality judgement and picture description tasks for THOSE are radically different from the results of ALL and ALL_OF_THOSE because it differs from these two in terms of the acceptance with countable and uncountable nouns. The grammaticality judgement and picture description tasks showed that the acceptability of THOSE as a determiner of the countable noun shows some variation and it is not compatible with uncountable nouns at all.

Let me start with countable nouns.

(56) and (57) below illustrates the structures that some of the participants found grammatical:

(56) THOSE follows the countable noun:

Context: I had a very important job. I had to work on the computer.

[TI_6b]: OFFICE COMPUTER THOSE BROKEN.

‘All of the computers in the office were broken.’

(57) THOSE precedes the countable noun:

[TI_23b]: OTHER_a UNIVERSITY THOSE_a KNOW NOT BUT BOGAZICI

UNIVERSITY IX(loc)_b THOSE_b PROFESSOR ENGLISH KNOW.

‘I do not know those other universities, but all the professors at Boğaziçi University know English.’

Below, the results of the grammaticality judgements of native and non-native signers are shown in the first table (Table 12). In the second table (Table 13), the general results on the countability and order are shown.

Table 12. THOSE: The Grammaticality Judgements for Countable Nouns and Order per Test Item

Test Items	Test Type	Native Participants	Non-Native Participants
TI_5b	CountN THOSE	2/4	2/4
TI_6b	CountN THOSE	2/4	0/4
TI_7b	CountN THOSE	0/4	0/4
TI_8b	CountN THOSE	0/4	0/4
TI_21b	THOSE CountN	0/4	1/4
TI_22b	THOSE CountN	0/4	1/4
TI_23b	THOSE CountN	1/4	3/4
TI_24b	THOSE CountN	0/4	0/4

Table 13. THOSE: General Results on Countable Nouns and Order

THOSE	Countable			
	Noun-Qua		Qua-Noun	
	Nat	Non-nat	Nat	non-nat
	4/16	2/16	1/16	5/16

These tables show that there are very few examples with THOSE co-occurring with a countable noun found as grammatical, contrary to the findings of ALL and ALL_OF_THOSE.⁷

⁷ Native participants found some instances of THOSE with a countable noun in the post-nominal position grammatical. In contrast, non-native participants found some instances of THOSE in the pre-nominal position grammatical. This contrast might be showing that the unmarked position for native participants is the post-nominal position while for non-native participants it is the pre-nominal position.

In the data elicited with picture description task, there was no example of THOSE preceding a countable noun.

As for THOSE and uncountable nouns, both the results of the grammaticality judgment tasks and picture description tasks showed that THOSE is not compatible with uncountable nouns, either.

Below, there are two tables showing the results of the grammaticality judgements. The first one (Table 14) shows the ratio of the grammaticality judgements of native and non-native signers for each test item and the second one (Table 15) shows the general results on the uncountability and order.

Table 14. THOSE: The Grammaticality Judgements for Uncountable Nouns and Order per Test Item

Test Items	Test Type	Native Participants	Non-Native Participants
TI_13b	UncountN THOSE	0/4	0/4
TI_14b	UncountN THOSE	0/4	0/4
TI_15b	UncountN THOSE	0/4	0/4
TI_16b	UncountN THOSE	0/4	0/4
TI_29b	THOSE UncountN	0/4	0/4
TI_30b	THOSE UncountN	1/4	0/4
TI_31b	THOSE UncountN	0/4	0/4
TI_32b	THOSE UncountN	0/4	0/4

Table 15. THOSE: General Results on Uncountable Nouns and Order

THOSE	Uncountable			
	Noun-Qua		Qua-Noun	
	Nat	non-nat	Nat	non-nat
	0/16	0/16	1/16	0/16

These tables above show that almost none of the test items with THOSE co-occurring with an uncountable noun was accepted. Also, it should be pointed out that there is no instance of picture description including THOSE with an uncountable noun.

Overall, the results of both the grammaticality judgement and picture description tasks show that THOSE is not compatible with uncountable nominal restrictors while there are some instances where it is accepted with a countable noun. This may be indicating that THOSE has a plural component which makes it incompatible with mass nouns.

To summarize this section, I have shown that there is a difference between the responses of the native and non-native signers on THOSE with a countable noun. There are some instances where native participants accept THOSE in the post-nominal position, while there are some instances which non-native participants accept with the reverse order. The reason for this difference might be that the unmarked position for native participants is the post-nominal position while it is the pre-nominal position for non-native participants, perhaps due to the influence of the quantifier-noun order in Turkish. On the other hand, there is no difference between the responses of the two types of signers on THOSE with an uncountable noun. Both native and non-native participants do not accept THOSE with an uncountable noun regardless of the determiner-head order. In the light of these results, it can be inferred that the acceptability rate of THOSE as a determiner of a countable noun is low, but it is not accepted at all as a determiner of an uncountable noun. These lead me to think that THOSE may have a plural component.

A possible cause for the low acceptability rate of THOSE even with countable nouns is discussed in Chapter 6.

The following sections will present findings regarding the possibility of nominal ellipsis with all these three signs.

5.4 ALL and ALL_OF_THOSE with nominal ellipsis

In this section, the findings of the picture description tasks and grammaticality judgment tasks related to nominal ellipsis are discussed. Also, the effect of the countability of the elided head noun in the NP is again taken into consideration.

The items tested for grammaticality judgments are Type-2 test items, which are identical to Type-1 test items but with the nouns elided.

Type-2 aims to find out whether ALL, ALL_OF_THOSE and THOSE allow nominal ellipsis because if they can function as a determiner, they may also allow nominal ellipsis. The following template (Table 16) illustrates this type of test item. Strikethrough represents the ellipsis.

Table 16. Type-2 Testing Item Template for Nominal Ellipsis and (un)Countability

Context:	I haven't gotten married yet. I'm the only single person among my friends. My friends are married.
Test item template_1 (CountN) SIGN)	[SIGN] CHILD HAVE. 'All (of them) have children.'
Context:	I was very hungry. I went into the kitchen. I saw soup on the countertop.
Test item template_2 (UncountN) SIGN order)	[SIGN] EAT. 'I ate all (of it).'

In the production of the test items, the [SIGN] slot was filled with ALL and ALL_OF_THOSE. In total, there were 5 contexts, 2 countable and 3 uncountable elided nouns.⁸ Thus, as a result, we had 15 test items produced with this kind of template. See Appendix A for all the contexts.

⁸ Note that there are more token test items with uncountable nouns than there are with countable nouns. This was not intentional and it is reflected in the numbers in the tables provided below.

Both the results of the grammaticality judgements and picture description tasks show that ALL and ALL_OF_THOSE allow nominal ellipsis with both countable and uncountable elided nouns.

(58) and (59) below illustrate two examples of the nominal ellipsis test items with ALL, one with an elided countable noun and the other with an elided uncountable noun. The structures below were found grammatical by the participants:

(58) Nominal ellipsis with an elided countable noun:

Context: I haven't got married yet. I'm the only single person among my friends. My friends are married.

[TI_33]: ALL CHILD HAVE.

'All have children.'

(59) Nominal ellipsis with an elided uncountable noun:

Context: I was very hungry. I went into the kitchen. I saw soup on the countertop.

[TI_41]: ALL EAT.

'I ate all (of it).'

Below, there are two tables (Table 17 and 18): The first table shows the grammaticality judgements of native and non-native signers for each test item. The second one shows the general results on ALL with nominal ellipsis including both countable and uncountable elided nouns. Strikethrough represents ellipsis.

Table 17. ALL: The Grammaticality Judgements on Nominal Ellipsis with an Elided Countable and Uncountable Noun

Test Items/Results	Type of the TI	Native Participants	Non-Native Participants
TI_33	ALL (Count N)	4/4	4/4
TI_35	ALL (Count N)	4/4	2/4
TI_37	ALL (Uncount N)	4/4	4/4
TI_39	ALL (Uncount N)	4/4	3/4
TI_41	ALL (Uncount N)	4/4	3/4

Table 18. ALL: General Results on Nominal Ellipsis with an Elided Countable and Uncountable Noun

ALL	Elided Countable N		Elided Uncountable N	
	Nat	non-nat	Nat	non-nat
	8/8	6/8	12/12	11/12

As can be seen from the tables above, no matter what the countability property of the noun is, the sentences constructed with ALL with an elided noun are grammatical for all native participants while there is variation in the grammaticality judgements provided by the non-native participants.

In the picture description task, signers used ALL with nominal ellipsis, which supports the results of the grammaticality judgement tasks. There were thirty-seven instances of ALL used with an elided countable noun, eight of them were produced by native participants and twenty-nine of them were produced by non-native participants. Below, pictures in Figure 22 and 23 and the descriptions elicited from two non-native signers (60) and (61) are shown:



Figure 22. A stimulus picture with countable nouns (boys)

(60) ALL SHOUT DO.

‘All of them are shouting.’



Figure 23. A stimulus picture with countable nouns (pigeons)

(61) ALL SAME COLOUR.

‘All are in the same color.’

What we see in (60) and (61) is that in the elicited data, as well, ALL is used with an elided noun. The elided nouns are countable (BOY and BIRD).

It can be concluded that ALL is compatible with nominal ellipsis. By looking at these results and the results given for ALL in the previous section it can be stated that ALL is a universal quantificational determiner which also allows nominal ellipsis.

As for ALL_OF_THOSE, both of the results of the grammaticality judgement and picture description tasks showed that ALL_OF_THOSE also allows nominal ellipsis, regardless of the countability property of the head noun.

(61) and (62) below illustrate two examples of the nominal ellipsis test items, one with elided countable noun and the other with elided uncountable noun. Here are the structures the participants found grammatical:

- (61) Context: I haven't got married yet. I'm the only single person among my friends. My friends are married.

_____ /hepsi/

[TI_34a]: ALL_OF_THOSE CHILD HAVE.

'All have children.'

- (62) Context: Professors at Boğaziçi University got their education in the US.

_____ /hepsi/

[TI_36a]: ALL_OF_THOSE ENGLISH KNOW.

'All know English.'

Below, there are two tables (Table 19 and 20), one showing the grammaticality judgements of native and non-native signers for each test item and the other showing the general results on ALL_OF_THOSE with nominal ellipsis including both countable and uncountable elided nouns Strikethrough represents ellipsis.

Table 19. ALL_OF_THOSE: The Grammaticality Judgements on Nominal Ellipsis with an Elided Countable and Uncountable Noun

Test Items	Test Type	Native Participants	Non-Native Participants
TI_34a	ALL_OF_THOSE (CountN)	4/4	4/4
TI_36a	ALL_OF_THOSE(CountN)	3/4	4/4
TI_38a	ALL_OF_THOSE (UncountN)	4/4	4/4
TI_40a	ALL_OF_THOSE (UncountN)	4/4	4/4
TI_42a	ALL_OF_THOSE (UncountN)	4/4	4/4

Table 20. ALL_OF_THOSE: General Results on Nominal Ellipsis with an Elided Countable and Uncountable Noun

ALL_OF_THOSE	Elided Countable N		Elided Uncountable N	
	Nat	non-nat	Nat	non-nat
	7/8	8/8	11/12	11/12

These results show that both native and non-native participants accept ALL_OF_THOSE with nominal ellipsis and the countability of the noun doesn't have an effect on the grammaticality.

The data collected from the picture description task shows that ALL_OF_THOSE was also used with nominal ellipsis while describing some pictures. There are twenty-two instances of ALL_OF_THOSE with an elided countable noun, fifteen of them were produced by the native participants and seven of them were produced by the non-native participants.

There is also one example of where ALL_OF_THOSE is used with an elided uncountable noun. The picture in Figure 24 below was presented to the participants in order to elicit an utterance with 'all the people' but one signer focused on the fact

that the background was all red. Thus, her utterance, in (64) below, is an example of ALL_OF_THOSE used with an elided uncountable noun, ‘background’.



Figure 24. A stimulus picture with countable nouns (people)

(64)ALL_OF_THOSE RED (background). HEART PERSON INSIDE.

‘All of that is red. People are inside the heart.’

To summarize, both of the results of the grammaticality judgement and picture description tasks showed that ALL_OF_THOSE allows nominal ellipsis, regardless of the countability property of the noun. By looking at these results, it can be stated that ALL_OF_THOSE can be a universal quantificational determiner which can be used with nominal ellipsis, as well.

As a summary, according to grammaticality judgement task, both for native and non-native participants ALL and ALL_OF_THOSE are compatible with nominal ellipsis, which means that both of them function as a determiner. Again, the results showed that the judgments of the native participants are consistent regarding the possibility of nominal ellipsis. This contrasts with the judgments of the non-native participants: there is variation in the judgments of the non-native participants. When we compare the findings of the picture description task with the findings of the grammaticality judgement task, we can conclude that picture description task supports the findings of the grammaticality judgement task in terms of the use of ALL and ALL_OF_THOSE with nominal ellipsis.

In the following section, I turn to THOSE with nominal ellipsis.

5.5 THOSE with nominal ellipsis

The results of THOSE with nominal ellipsis are significantly different from ALL and ALL_OF_THOSE. By looking at the results of the grammaticality judgement and picture description tasks, it can be inferred that THOSE does not allow nominal ellipsis, regardless of the countability property of the noun.

Below, there are two tables showing the results of the grammaticality judgement task. The first one (Table 21) shows the grammaticality judgements of native and non-native signers for each test item and the second one (Table 22) presents the general results on THOSE with nominal ellipsis including both countable and uncountable elided nouns. Strikethrough represents ellipsis.

Table 21. THOSE: The Grammaticality Judgements on Nominal Ellipsis with an Elided Countable and Uncountable Noun

Test Items	Test Type	Native Participants	Non-Native Participants
TI_34b	THOSE (Count N)	0/4	0/4
TI_36b	THOSE (Count N)	1/4	1/4
TI_38b	THOSE (Uncount N)	0/4	0/4
TI_42b	THOSE (Uncount N)	0/4	0/4
TI_40b	THOSE (Uncount N)	0/4	0/4

Table 22. THOSE: General Results on Nominal Ellipsis with an Elided Countable and Uncountable Noun

THOSE	Elided Countable N		Elided Uncountable N	
	Nat	non-nat	Nat	non-nat
	1/8	1/8	0/12	0/12

By looking at the tables above, it can be concluded that T1D does not license THOSE with an elided countable or uncountable noun.

However, contrary to the results of the grammaticality judgement task, in the data elicited with pictures, THOSE was used by both the native and non-native signers. There were twenty examples of THOSE with an elided countable noun, nine of them were provided by native participants and eleven of them were provided by non-native participants. Below, there are two pictures in Figure 25 and 26 and the descriptions made by a native (65) and a non-native (66) signer.



Figure 25. A stimulus picture with countable nouns (buildings)

(65)



ONE

PLACE

ISTANBUL

LIKE



THOSE

BUILDING....

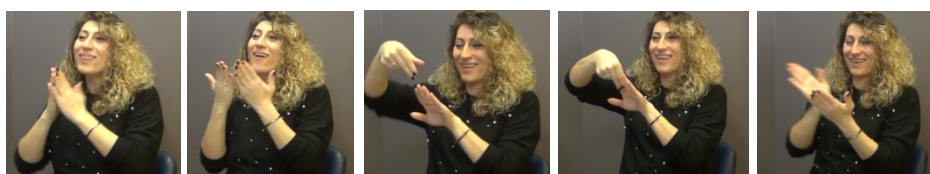
THERE_IS

‘This is a place like İstanbul. Those are buildings.’



Figure 26. A stimulus picture with countable nouns (paper clips)

(66)



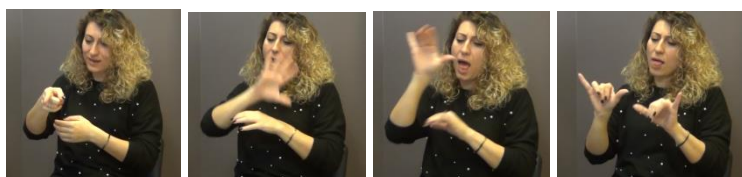
NOTEBOOK



PAPER CLIP_a



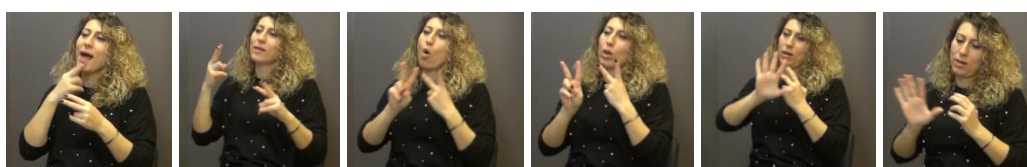
PAPER



_____ /hepsi/

IX_{3a}

ALL_OF_THOSE_a SAME

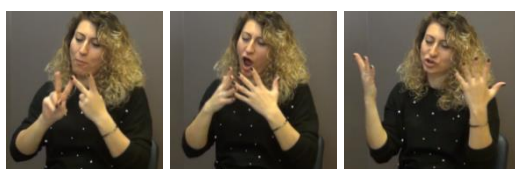


RH:COLOR

PURPLE

THOSE_a

LH: PURPLE.....



PURPLE

LIGHT

‘Notebook... Paper Clip... Papers.... All of those are in the same color, purple.

Those are light purple.’

The contrast between the grammaticality judgments and the elicited data may be due to the incompatibility of the contexts and the test items given in the grammaticality judgements. The major difference between the two tasks is that participants describe a picture in the picture description task but the consultant did not describe a picture to produce the test items in the grammaticality judgment task. Moreover, in the test items the consultant signed THOSE in the central signing space but in the elicited data the participants signed THOSE not only in the central but also in the ipsi-lateral or contra-lateral signing space. In the examples in (65) and (66), the signers set the scene and sign THOSE in the central area but we will see in Section 5.8 that there were also examples of THOSE in ipsi-lateral and contra-lateral signing space.

Now let me analyze the examples in (65) and (66) in more detail. In (65), the signer first signs PLACE, which is a two-handed sign. Then she holds the sign in her non-dominant hand and when she signs THOSE, she signs it above her non-dominant hand. I propose that the fragment of PLACE on the non-dominant hand represents “the set of entities in that place”, and functions as the antecedent of THOSE. When THOSE is signed in the same location as PLACE in the signing space, the signer expresses a phrase such as “those entities in that place”. Thus, THOSE, here, is a demonstrative pronoun.

In (66), as well, THOSE is signed in the same locus as a sign expressing location. However, in this case, instead of a lexical sign such as PLACE, we see a functional sign, a locative index, IX(loc)_a ‘here/there’. Here as well, I propose that THOSE functions as a demonstrative pronoun, and expresses a phrase such as ‘those entities there’.

5.6 Do ALL, ALL_OF_THOSE and THOSE have a pronominal component?

The remaining grammaticality judgment tasks that I conducted aimed at investigating whether these signs could actually belong to a category other than a simple quantificational determiner. A potential candidate for such a category is pronominal.

In many sign languages including TİD, pointing (index) signs have the 1-handshape () and they have a variety of functions, most of which are pronominal (Costello et. al., 2017). If the locus of an entity is already established in the signing space, pointing to that locus functions as a pronoun and establishes anaphoric reference. Pointing signs can also function as demonstrative determiners or demonstrative pronouns, and “nominal index” (Nuhbaloğlu & Özsoy, 2014), occurring after the nouns and localizing their abstract referential locus in the signing space. Below, the examples of a pronoun (IX_{3a}), a demonstrative determiner IX(dem)_a, and a localizer (NIX) are given under (67).

(67) a. Pronoun

[POSS₁ FRIEND_a IX(loc)_a] EAR ACHE. TODAY IX_{3a} HOME STAY
WANT.

'My friend has an earache. She wants to stay home today.'

(adapted from Gökgöz, forthcoming)

b. Demonstrative Determiner

IX(dem)_a MAN MONEY TAKE

'That man took the money.'

(Nuhbaloğlu & Özsoy, 2014, p. 8)

c. Demonstrative Pronoun

gaze_i

lowered brows

nose wrinkle

IX_{pro-i} , THINK DOG

‘That (I) think is a dog.’

(MacLaughlin, 1998, p. 120)

d. Localizer

NIX (nominal index): locus assigning elements

MY FRIEND NIX EAR ACHE

‘My friend has an earache.’

(Nuhbaloglu & Özsoy, 2014, p. 9)

Recall from 5.1.2. that ALL_OF_THOSE and THOSE have the open five handshape () with five fingers spread, and they are signed at the loci of the entities they quantify over. These facts raise the question whether they could also be pointing signs, namely, whether they could be pointing to a plurality of entities: as plural demonstratives (‘these’, ‘those’) and/or as plural localizers. Another possibility is a complex sign, combining the universal quantificational determiner with a plural pronominal, with a meaning such as ‘all of them’.

In order to test whether they are simple universal determiners or whether they have a pronominal component, two types of grammaticality judgment tests have been conducted: one tests whether they can co-occur with personal pronouns, and the other tests their scopal interaction with negation.

Even though these questions were originally related to THOSE and ALL_OF_THOSE, I also tested ALL to complete the paradigm.

Before discussing the test items and the result, let me highlight here that the possibility for ALL and ALL_OF_THOSE as localizers can be eliminated based on the findings reported in the previous sections. Since these two signs are accepted to occur before the nouns, they cannot just be localizers since localizers tend to occur after the nouns they localize in TİD (Nuhbalaoğlu & Özsoy, 2014).

The reason behind testing whether these signs can co-occur with personal pronouns is the assumption that if they cannot co-occur with personal pronouns, then they contain a pronominal component themselves. If, however, they can co-occur, then this co-occurrence is expected to result in meanings such as ‘us all/all of us’, ‘you all/all of you’, and ‘they all/all of them’.

The following tables 23, 24, and 25 show the template of Type-3 test items of my study.

Table 23. Type-3 Testing Item Template Having First Person Plural Pronoun

Context:	There is a school trip. We’re supposed to notify teachers whether we’re going or not. Therefore, we talked to my friends and decided to go.
Test item template_1 (Pronoun - SIGN order)	THEREFORE IX _{1pl} [SIGN] LIST NAME WRITE. TRIP GO. ‘So, we all wrote our names to the list. We’re going to go to the trip.’
Test item template_2 (SIGN-Pronoun order)	THEREFORE [SIGN] IX _{1pl} LIST NAME WRITE. TRIP GO. ‘So, we all wrote our names to the list. We’re going to go to the trip.’

Table 24. Type-3 Testing Item Template Having Second Person Plural Pronoun

Context:	We were going to have breakfast together with the (Deaf) association in Polonezköy. I told you three weeks ago.
Test item template_1 (Pronoun - SIGN order)	IX _{2pl} [SIGN] FORGET ‘You all forgot.’
Test item template_2 (SIGN-Pronoun order)	[SIGN] IX _{2pl} FORGET. ‘You all forgot.’

Table 25. Type-3 Testing Item Template Having Third Person Plural Pronoun

Context:	There's a school trip. We're supposed to notify teachers whether we're going or not. Therefore, we talked to my friends and decided to go and wrote our names to the list.
Test item template_1 (Pronoun - SIGN order)	TRIP DAY IX _{3pl} [SIGN] GET READY GO. IX ₁ LATE. 'On the day of the trip, they all got ready and left. I was late.'
Test item template_2 (SIGN-Pronoun order)	TRIP DAY [SIGN] IX _{3pl} GET READY GO. IX LATE. 'On the day of the trip, they all got ready and left. I was late.'

In the production of the test items, the [SIGN] slot was filled with ALL, ALL_OF_THOSE or THOSE, with three plural personal pronouns (IX_{1pl} 'we', IX_{2pl} 'you(pl)', and IX_{3pl} 'they') and in two different orders. Thus, as a result, we had 18 test items produced with this template.

In addition to evaluating the results of the grammaticality judgment task, I analyzed the data in the picture description tasks to see whether there are any utterances in which these signs co-occurred with a plural personal pronoun. All these will be discussed below.

Even though, as I mentioned above, this test was designed originally for ALL_OF_THOSE and THOSE, and ALL was also added to complete the paradigm. Perhaps surprisingly, acceptance of the test items is quite low for all these three signs including those with ALL. While there are a few items with ALL and ALL_OF_THOSE accepted with plural personal pronouns, there is no test item with THOSE with plural personal pronouns that has been accepted by the participants. Consider first the tables (Table 26 and 27) below for ALL and ALL_OF_THOSE.

Table 26. ALL with Plural Personal Pronouns

ALL		nat	non-nat
	IX _{1pl} - Qua	2/4	4/4
	IX _{2pl} -Qua	0/4	2/4
	IX _{3pl} - Qua	2/4	3/4
	Qua- IX _{1pl}	0/4	2/4
	Qua- IX _{2pl}	0/4	2/4
	Qua- IX _{3pl}	1/4	2/4

Table 27. ALL_OF_THOSE with Plural Personal Pronouns

ALL_OF_THOSE		nat	non-nat
	IX _{1pl} - Qua	0/4	3/4
	IX _{2pl} - Qua	0/4	3/4
	IX _{3pl} - Qua	1/4	3/4
	Qua - IX _{1pl}	0/4	3/4
	Qua - IX _{2pl}	1/4	2/4
	Qua - IX _{3pl}	0/4	2/4

Even though the number of the items are too low to make any quantificational claims, at least qualitatively, one can say that the results show some parallelism: in both, the acceptability rates are very low for native signers and these are slightly higher for non-native signers.

Moreover, I have found no instance of ALL or ALL_OF_THOSE co-occurring with plural pronouns in the elicited data.

The results of the test items with THOSE are quite different. They demonstrate that the use of THOSE with the plural personal pronouns is accepted by neither the native nor the non-native participants. Also, in the data elicited in the

picture description task, there was no instance of using THOSE with plural personal pronouns.⁹

Below, the Table 28 shows the overall results of THOSE with plural personal pronouns in both the pre-quantifier and the post-quantifier position.

Table 28. THOSE with Plural Personal Pronouns

THOSE		nat	non-nat
	IX _{1pl} - Qua	0/4	0/4
	IX _{2pl} - Qua	0/4	0/4
	IX _{3pl} - Qua	0/4	2/4
	Qua - IX _{1pl}	0/4	0/4
	Qua - IX _{2pl}	0/4	1/4
	Qua - IX _{3pl}	0/4	0/4

The difference between the responses of the native and non-native signers leads me to evaluate the results separately. Given the very low acceptability rate, I conclude that in the grammar of the native signers, none of these signs can occur with plural pronouns. Since ALL and ALL_OF_THOSE can co-occur with nouns, if the co-occurrence restriction with pronouns points to a pronominal feature of these signs, then the utterances they are found grammatical in the previous sections can be said to have the following meaning in (68):

(68) FRIEND ALL CHILD HAVE.

‘My friends, all of them, have children.’

This would still not explain why these signs cannot co-occur with a 3rd person plural pronoun, as in a sentence with the meaning ‘They, all of them, ...’.

⁹ As Table 28 shows, in two instances non-native participants accepted the use of IX_{3pl} with THOSE. I don't have an explanation for this.

Another alternative is that these are both quantificational determiners, as hypothesized before, and they simply cannot take pronouns as their restrictor. This may be due to a yet-to-be-investigated difference between the pronouns in languages like English and Turkish (where it is possible) and the pronouns in TİD.

Additionally, ALL_OF_THOSE has its own restrictor as a component of the sign which is a demonstrative pronoun, therefore, the incompatibility is not surprising.

As for the non-native signers, the higher acceptability rates by these participants may be due the effect of the surrounding spoken language because in Turkish the quantificational determiner can be used together with plural personal pronouns such as in *onların hepsi* 'all of them'.

Now, recall that THOSE with plural pronouns is not accepted by both of the signer types. Putting this together with the other findings I discussed in earlier sections, namely, that THOSE cannot co-occur with an uncountable noun, this supports my proposal that THOSE is a plural indexical (demonstrative) sign having a pronominal function.

5.7 Do ALL, ALL_OF_THOSE and THOSE have universal quantification?

In this section, I discuss the scopal interactions of ALL, ALL_OF_THOSE and THOSE with negation.

This is also motivated by the question whether any of these signs can be pronominal, as opposed to quantificational. Consider the possibility that a sign may be pronominal with the meaning 'they' or 'these'/'those'. Given the non-quantificational nature of pronouns, we expect no ambiguity when it occurs with sentential negation. However, if the sign is a universal quantifier, it can, in principle,

interact with negation scopally and can have wide or narrow scope with respect to it.

The following (69) provides the potential readings:

(69) STUDENT [Universal Quantifier] COME NOT.

(i) narrow scope of negation: It is true for all students that they didn't come.

(ii) wide scope of negation: It is not true that all students came.

The aim of the grammaticality task that I conducted is to see whether the signs I was investigating could induce readings with wide scope of negation as in (ii) above. Therefore, I designed contexts where the test items were followed by utterances such as 'Some came, some did not.' Notice that if the reading (ii) is not available, and only reading (i) is available, this follow-up utterance should not be acceptable as seen in (70).

(70) STUDENT [SIGN] COME NOT. SOME COME. SOME COME NOT.

(i)* It is true for all students that they did not come. Some came. Some did not come.

(ii)*The students did not come. Some came. Some did not come.

(iii)*The students, they did not come. Some came. Some did not come.

Therefore, I did not test for the reading in (i) because showing that it is available would not have helped me differentiate the signs from pronominals (or definite NPs in general).

Table 29 and Table 30 below show the template of Type 4 test items. These also include the factors of the countability of the noun, the order of the quantifier and the noun, and nominal ellipsis. Strikethrough represents nominal ellipsis.

Table 29. Type-4 Testing Item Template for Interaction with Negation

Test Item_Template_1 (CountN-SIGN order with neg.)	STUDENT [SIGN] COME NOT. UNIVERSITY STUDENT COME. HIGH SCHOOL STUDENT COME NOT. 'Not all students came. University students came. High school students didn't come.'
Test Item_Template_2 (SIGN-CountN order with neg.)	BASKET [SIGN] APPLE EAT NOT. TWO LEAVE. 'I didn't eat all of the apples in the basket. I left two of them.'
Test Item_Template_3 (UncountN-SIGN order with neg.)	SOUP [SIGN] EAT NOT. MOTHER FOR HALF LEAVE. I didn't eat all the soup. I left half of it for my mother.'
Test Item_Template_4 (SIGN-CountN order with neg.)	[SIGN] STUDENT COME NOT. UNIVERSITY STUDENT COME. HIGH SCHOOL STUDENT COME NOT. 'Not all students came. University students came. High school students didn't come.'
Test Item_Template_5 (SIGN-CountN order with neg.)	BASKET [SIGN] APPLE EAT NOT. TWO LEAVE. 'I didn't eat all of the apples in the basket. I left two of them.'
Test Item_Template_6 (SIGN-UncountN order with neg.)	[SIGN] SOUP EAT NOT. MOTHER FOR HALF LEAVE. 'I didn't eat all the soup. I left half of it for my mother.'

Table 30. Type-4 Testing Item Template for Interaction with Negation (with Nominal Ellipsis)

Test Item_Template_7 (CountN) SIGN with neg.)	Context: I had a birthday party. I invited my friends from primary school. Test item: [SIGN] COME NOT BUT SOME COME. 'Not all came but some of them came.'
--	---

In the production of the test items, the SIGN slot was filled with ALL, ALL_OF_THOSE and THOSE. Thus, as a result, we had 18 test items produced with this template.

5.7.1 Interaction of ALL and ALL_OF_THOSE with negation

The results showed that both ALL and ALL_OF_THOSE interact with negation and induce wide scope readings for negation. Below, there are four tables (Table 31, Table 32, Table 33, Table 34) showing the grammaticality judgements of the native and non-native participants on negative sentences constructed with countable and uncountable nouns and negative sentences including nominal ellipsis.

Table 31. ALL in a Negative Sentence

ALL	Countable				Uncountable			
	Noun-Qua (neg)		Qua-Noun (neg)		Noun-Qua (neg)		Qua-Noun (neg)	
	nat	non-nat	nat	non-nat	nat	non-nat	nat	non-nat
	8/8	7/8	8/8	6/8	4/4	4/4	4/4	4/4

Table 32. ALL in a Negative Sentence Including Nominal Ellipsis

ALL	Elided Countable N (neg)	
	nat	non-nat
	3/4	3/4

Table 33. ALL_OF_THOSE in a Negative Sentence

ALL_OF_THOSE	Countable				Uncountable			
	Noun-Qua (neg)		Qua-Noun (neg)		Noun-Qua (neg)		Qua-Noun (neg)	
	nat	non-nat	nat	non-nat	nat	non-nat	nat	non-nat
	8/8	8/8	8/8	7/8	4/4	4/4	4/4	2/4

Table 34. ALL_OF_THOSE in a Negative Sentence Including Nominal Ellipsis

ALL_OF_THOSE	Elided Countable N (neg)	
	nat	non-nat
	4/4	4/4

Most of the 8 participants found the test items with both ALL and ALL_OF_THOSE grammatical. So, I conclude that ALL and ALL_OF_THOSE are in fact quantificational and not merely pronominal because if they were pronominal, the utterances in the task would be unacceptable because the follow-up sentences would contradict with the test items. This means that both of these signs and negation have scopal interaction in a way that a universal quantifier and a negative operator would have, i.e. a universal quantifier is under the scope of a negative operator.

5.7.2 Scopal interaction of THOSE with negation

So far, the results show that according to the picture description task which is a production task, THOSE is used as a pronoun and not a quantificational determiner. To support the analysis that THOSE is not a universal quantifier, the consultants were asked to judge the test items shown in the previous section including THOSE.

In Table 35 and Table 36 below the grammaticality judgements of the native and non-native participants on negative sentences constructed with countable and uncountable nouns and the negative sentences including nominal ellipsis are shown:

Table 35. THOSE in a Negative Sentence

THOSE	Countable				Uncountable			
	Noun-Qua (neg)		Qua-Noun (neg)		Noun-Qua (neg)		Qua-Noun (neg)	
	nat	non-nat	nat	non-nat	nat	non-nat	nat	non-nat
	3/8	2/8	0/8	1/8	2/4	1/4	0/4	0/4

Table 36. THOSE in a Negative Sentence Including Nominal Ellipsis

THOSE	Elided Countable N (neg)	
	nat	non-nat
	2/4	3/4

The overall results show that the participants do not accept THOSE in a determiner and pronominal position in the negative sentence with wide scope interpretation of negation. This further supports the conclusion that THOSE is not a universal quantifier since it does not have a scope relation with negation.

When all of these results on THOSE are taken into consideration, we can conclude that THOSE is a plural demonstrative pronoun.

5.8 The relation between the use of space and the restrictor

Before describing the relationship between the use of space and the restrictor of a quantifier, the difference between abstract location and topographic location should be mentioned briefly.

Abstract, in other words non-descriptive (Quer et al., 2015), location is assigned by the signer in the signing space to identify the locations of the entities (Discourse Referents). These locations are also called as r-locus (referential locus) and these abstract locations assigned to the DRs do not affect the truth conditions of the sentence (Barberà, 2014). In other words, the abstract location of an entity in the signing space can change from signer to signer.

Topographic or descriptive (Quer et al., 2015) location means that the entities are situated in meaningful locations in signing space which represent the spatial relations among the entities in the actual world. Contrary to abstract locations, a small change in the topographic location causes the change in the truth conditions (Barberà, 2014). For instance, topographic location can be used to express the relationship between two entities such as being next to each other or across from each other.

The difference between descriptive and non-descriptive localizations is that descriptive localization assigns a particular location to the entity in the signing space while non-descriptive localization assigns an abstract relationship between the entity and the related referential locus (r-locus) (Barberà, 2014).

When the use of space is examined through the picture description task, it is clear that ALL does not use localization. It is signed in the central space and does not change according to the location of the restrictor.

The localization issue emerges when ALL_OF_THOSE and THOSE are examined. ALL_OF_THOSE is signed in the same location with its restrictor, and THOSE is signed in the locus of the plural entity it refers to. Below, the picture in Figure 27 and the description (71) elicited from the signer including ALL_OF_THOSE, which is signed in the same location with its restrictor, are presented.



Figure 27. A stimulus picture with countable nouns (chocolates)

(71)



...OTHER IX(loc)_a SAME CHOCOLATE. ONE BROWN DARK



/hepsi/

CL:Choc._bar BLACK

ALL_OF_THOSE_a

SAME

‘In the other picture, there, the chocolates are the same. There is one dark brown chocolate bar, all of those are the same. (The other ones are mixed and different.)’

By looking at the picture and description, we see that ALL_OF_THOSE was used by the signer to express that there is a shared feature in the picture on the right such as chocolate. Apart from this, it is signed in a specific location assigned by the signer in the signing space. This use is an example of abstract use because the signer assigned a location to the entities on the ipsi-lateral side in (71) shown in the pictures.

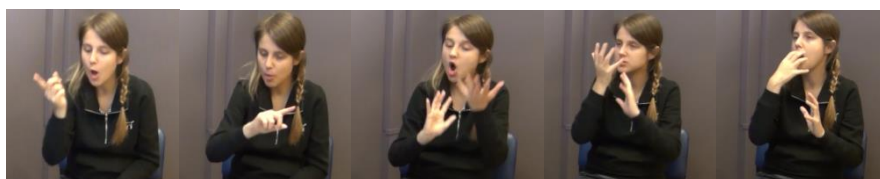
Below, the pictures used are shown in Figure 28 and 29 and the descriptions including THOSE which are signed in the same location with the plural antecedent and the descriptions provided by the signers are presented in (72) and (73).



Figure 28. A stimulus picture with countable nouns (trees)

The examples below contain THOSE. (72) is a description by a signer of the picture in Figure 28.

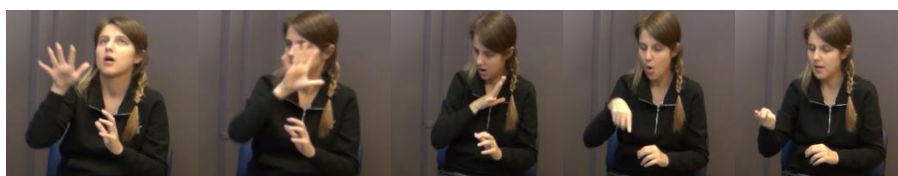
(72)



OTHER_a

TREE

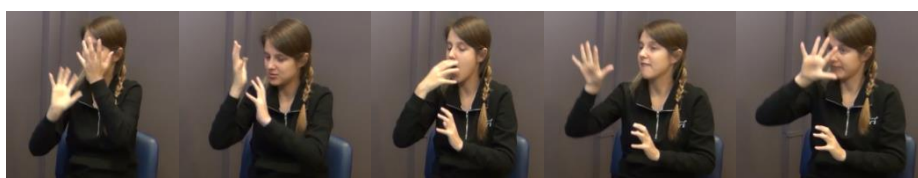
APPLE



THOSE_a

THERE_IS.

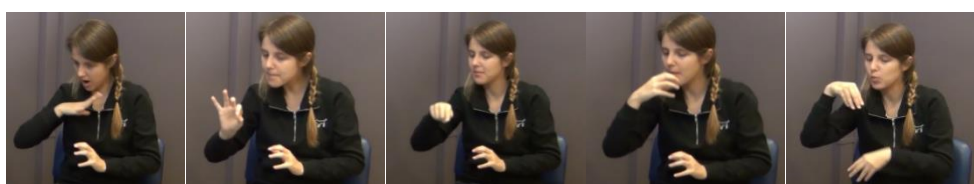
OTHER_b



TREE

APPLE

THOSE_b



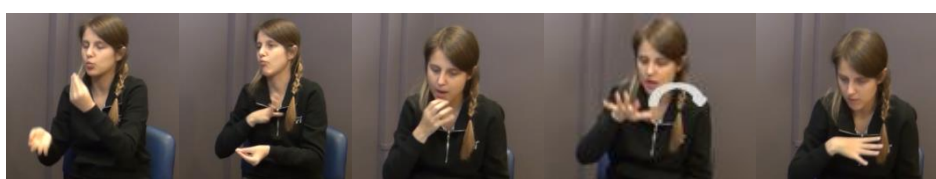
THERE_IS.

BOTH

IX(loc)_b

APPLE

FALLEN.....



.....

THERE_IS.

APPLE

THOSE_a

THERE.IS

‘In the other picture (picture on the left), those are apples on the tree. On the other picture (picture on the right), there are both those apples on the tree and apples which are fallen. Those apples are on that tree (by pointing to the tree on the left).’

In Figure 28, there are two pictures including apple trees for the signers to compare and contrast. So, each picture contains a different set of apples. (72) is the

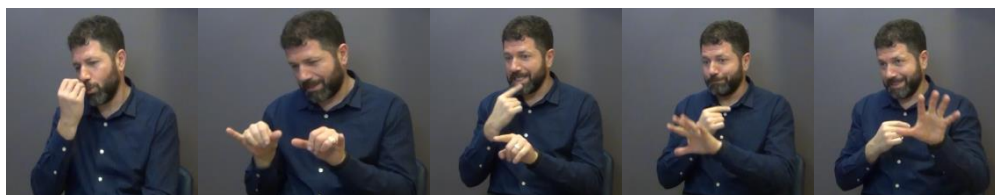
description of the picture. Here, the signer divides the signing space into two and assigns the description of the picture on the right to the ipsi-lateral area. She first points to contra-lateral area and then she signs APPLE (antecedent of THOSE_b). After that, she signs THOSE_a in the same location as the pointing sign. Similarly, she points to the contra-lateral area and she signs APPLE (antecedent of THOSE_b). Then, she signs THOSE_b in the same location as the pointing sign. After that, she signs THOSE_b while referring to the antecedent.

Similarly, (73) is a description by a signer of the picture in Figure 29.



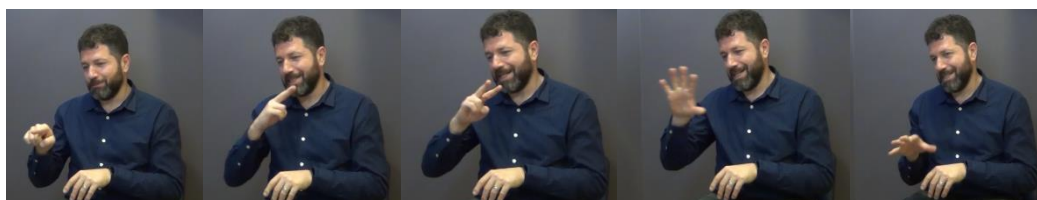
Figure 29. A stimulus picture with countable nouns (roses)

(73)



R.H:ROSE SAME. RED THOSE_a.

L.H: IX(loc)_a



IX(loc)_b COLORFUL THOSE_b

‘Roses are same. Those are red. Those are colorful.’

Again, we see that the antecedent ROSE is introduced in the first sentence. Then the locations are set in the signing space with the locative signs, $IX(loc)_a$ and $IX(loc)_b$. Two occurrences of THOSE are signed in the same location as their antecedents, which are the locative index signs. These show that THOSE is signed in a specific location assigned by the signer in the signing space. This use is an example of abstract use as we saw in ALL_OF_THOSE because the signers assign a location to the entities shown in the pictures.

By looking at all of the results given by ALL_OF_THOSE and THOSE, it can be concluded that THOSE is a plural demonstrative pronoun used with a plural antecedent in a specific location in the signing space. While this is not the same with ALL_OF_THOSE, on the other hand, has a quantificational property. A more detailed analysis of these signs are provided in the next chapter.

CHAPTER 6

DISCUSSION

This chapter provides a discussion based on the findings presented in the previous chapter and presents the typological similarities and differences between TĪD and other sign languages in terms of the findings in this thesis. 6.1 and 6.2 discuss the findings of this thesis, 6.3 compares the syntactic properties of the universal quantifiers in TĪD with those in other sign languages. 6.4 presents the similarities and differences between the use of space in representing meaning in TĪD with that in other sign languages.

6.1 Analysis of ALL, ALL_OF_THOSE and THOSE

Based on the results of the grammaticality judgment and picture description tasks, I would like to argue that ALL is a quantificational determiner while ALL_OF_THOSE has two components, one of which is a universal quantificational determiner and the other is a demonstrative. Even though phonologically, THOSE differs from ALL_OF_THOSE only in the absence of mouthing, I have shown that THOSE is just a demonstrative determiner/pronoun. The arguments for these proposals are summarized below.

The most straightforward evidence for ALL being a universal quantificational determiner is that it has an interaction with negation in a way only a universal quantifier would have. Moreover, it can be used pre-nominally or post-nominally and it allows nominal ellipsis. It is incompatible with plural personal pronouns, which may be because ALL cannot take a plural personal pronoun as a restrictor in TĪD.

Lastly, it is only signed in the central signing space and this distinguishes it from the other three signs.

I analyze ALL_OF_THOSE as a universal quantifier with a partitive meaning. What is special of this sign is that the definite set (THOSE (N)) the universal quantifier quantifies over is a component of the sign. It involves universal quantification since it interacts with negation in a way a universal quantifier would, similar to ALL. Another similarity between ALL and ALL_OF THOSE is that the latter is also incompatible with plural personal pronouns and there could be two reasons for this. One could be the same with the reason stated for ALL and another reason, which is sensible when the sign is examined, could be that since ALL_OF_THOSE has its own restrictor as a component of the sign and the restrictor itself is a pronominal, the incompatibility is not surprising. Similar to ALL, it can be used pre-nominally or post-nominally and it allows nominal ellipsis. However, it differs from ALL in one respect, which is the use of space. ALL_OF_THOSE is signed in the same location with its restrictor, which is assigned by the signer in the signing space. As for its morphological make-up, I propose that ALL_OF_THOSE has two components: the first one is the universal quantificational determiner, which is expressed by mouthing *hepsi* 'all', and the second one is the plural demonstrative pronoun, which is expressed by the handshape () and circular movement, as in THOSE. In that case it is interesting that the mouthing has a semantic contribution.

As for THOSE, the results are significantly different from ALL and ALL_OF_THOSE. Firstly, it does not have an interaction with negation in a way that a universal quantificational determiner would. This eliminates the possibility of it being a universal quantificational determiner. Second, it is incompatible with both countable and uncountable nouns. Similar to ALL and ALL_OF_THOSE, it cannot

be used together with the plural personal pronouns. It is signed in the locus of the plural entities it refers to, reminiscent of indexical signs. I would like to propose, based on all these properties, that this sign is a plural demonstrative pronoun.

6.2 Analysis of ALL_OF_THOSE^SAME

ALL_OF_THOSE^SAME is radically different from the signs discussed so far because it is an incorporation of two signs; ALL_OF_THOSE and SAME.

ALL_OF_THOSE^SAME involves incorporation of the movement of ALL_OF_THOSE and the handshape of SAME. Recall from Section 5.1.2 that ALL_OF_THOSE is articulated with a (semi-)circular movement. The sign SAME¹⁰ has little+thumb finger handshape (Kubus, 2008)¹¹, see Figure 30 below. It is articulated with a short, downward path movement in the vertical plane, see Figure 31 below. Thus, ALL_OF_THOSE^SAME has little+thumb finger handshape (Kubus, 2008) but a circular movement, see Figure 32 below. Moreover, the signers, while articulating ALL_OF_THOSE^SAME, mouth either the Turkish word *hepsi* ‘all’ (as in ALL_OF_THOSE) or the Turkish word *aynı* ‘same’. These mouthings are optional. In addition to these, sometimes, protruding tongue accompanies the sign as a non-manual as can be seen in Figure 32.



Figure 30. Little+thumb finger handshape; handshape of SAME

¹⁰ SAME can be both one handed and double handed. Similarly, ALL_OF_THOSE^SAME can be both one handed and double handed.

¹¹ This handshape is equivalent to ASL letter Y handshape.

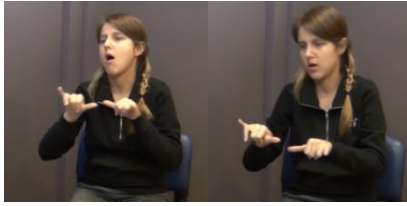


Figure 31. SAME



Figure 32. ALL_OF_THOSE^SAME

As Barberà (2012) explains and as I discussed earlier in Section 5.8, there are two functions of space in SLs. One is syntactic and the other is topographic. In the syntactic use of space, an abstract location is assigned in the signing space arbitrarily to an entity by the signer. The change of the locus of the entity does not change the truth conditions of the proposition. In topographic use of space, on the other hand, the spatial relations among the entities in the actual space/world are reflected as such in the signing space. They are represented by meaningful locations by taking advantage of the iconic features of the visual-spatial modality. Therefore, this topographic use of space enables the signer to express the physical spatial relations in the signing space.

The shape of the movement (linear/straight, circular, arc, etc.) of the ALL_OF_THOSE^SAME is determined by the topographic locations of the depicted entities in the actual space. For instance, in an elicitation task, signers were asked to describe a picture in which a number of women were located in linear order and their appearances in terms of weight and height were the same. To express this, the signers produced ALL_OF_THOSE^SAME with a straight/linear movement as shown below in (74):

(74)



FIVE

WOMAN

ALL_OF_THOSE

TALL



THIN

ALL_OF_THOSE^SAME

BUT.....

‘There are five women. All of them are tall and thin. All of them are the same but....’

In another picture, the women were located in a circular pattern and the color of their dresses was the same. In this case, the signers produced

ALL_OF_THOSE^SAME with a circular movement as shown below in (75):

(75)



WOMAN

ALL

WHITE

(WEAR)DRESS



ALL_OF_THOSE^SAME

THERE ARE...¹²

‘All the women are wearing white dresses, all are the same...’

¹² The sign THERE IS/ARE is frequently used in picture descriptions at the end of the utterance. In this example, it does not seem to be the predicate of the previous sentence. Its function in these contexts has not been identified yet. The meaning may be ‘There is this in this picture.’ The analysis of this sign is out of scope the scope of this thesis.

As a summary, this sign is used when these entities are physically situated with respect to each other in a certain arrangement such as in a line or forming a circle. The shape of the movement (linear/straight, circular, arc etc.) of the ALL_OF_THOSE^SAME is determined by the topographic locations of the depicted entities in actual space, given in the context.

More detailed research is necessary to identify its properties but based on the elicited utterances in my data I suggest that this sign may be the expression of an entire proposition and it expresses a meaning such as ‘All of those entities (in a circle, line, etc.) are the same.’.

If the analysis of this sign is correct, then it also has implications for incorporation in sign languages. So far it has been reported in the literature that signs with incorporation in sign languages involve mostly numerals (Cormier, 2002) but in addition to numerals, I propose that other signs such as ALL_OF_THOSE^SAME which contains a predicative adjective 'same' and a complex sign having a universal quantificational determiner and demonstrative components can be formed as a result of incorporation. One can raise the question whether it is just a predicate. However, if I am correct in analyzing this complex sign and it contains a universal quantifier, then it cannot be a predicate since universal quantifiers (or strong quantifiers in general) cannot be predicates (Milsark, 1976). Additionally, to be able to eliminate this possibility completely, an elicitation task questioning whether ALL_OF_THOSE^SAME can be used together with a predicate should be conducted. My proposal is based on the data elicited with the picture description task and there was no grammaticality judgement task testing the distribution of this sign.

6.3 Typological implications of the syntactic properties

There are some similarities and differences between TID and other sign languages in terms of the syntactic position of universal quantifiers with respect to the noun they modify.

Recall that according to the results of the grammaticality judgment and picture description tasks, I showed that ALL and ALL_OF_THOSE can be used pre-nominally or post-nominally. This is similar to the observations made for universal quantifiers in ASL (Liskova, 2017), RSL (Kimmelman, 2017) and DGS (Bisnath, 2017). However, it is important to point out some differences. Firstly, the comparison between native and non-native participants in terms of the use of language has not been reported in other sign languages. My study includes both native and non-native participants to be able to compare whether there is a difference between language performance, which is discussed in Section 4.3.1 and some differences have been observed. While there is more consistency among the judgements provided by the native signers, the non-native signers show variation in terms of the judgements that they provide. Since the age of acquisition and acquisition process plays an important role in language performance (Penfield & Roberts, 1959; Emmorey, 2002), the variation among non-native signers is not surprising. Secondly, it is important to emphasize that in my data there is no example of doubling of a quantifier as seen in RSL and ASL.

When the picture description task is examined, it is clear that all the examples with ALL and ALL_OF_THOSE are given in post-nominal order although both pre-nominal and post-nominal positions are accepted by the participants in the grammaticality judgement task. Since the picture description task is a natural production task, it may be showing the general tendency in the language and this

tendency is not surprising because TİD is argued to be head final (Açan, 2001; Sevinç, 2006; Gökgöz, 2011). Therefore, my data supports this argumentation.

According to the results of the grammaticality judgment and picture description tasks, TİD licenses nominal ellipsis for ALL and ALL_OF_THOSE. This is another similarity with ASL (Abner & Wilbur, 2017; Liskova, 2017) and RLS (Kimmelman, 2017).

6.4 Function of space in the representation of meaning

In the previous chapter, the use of space was examined, and it was stated that ALL does not use localization. It is signed in the central space and its location does not change according to the location of the restrictor. However, the signing space of ALL_OF_THOSE and THOSE is not limited to the central area. ALL_OF_THOSE is signed in the same area with its restrictor and THOSE is signed in the same area with its antecedent. In addition, ALL_OF_THOSE^SAME uses space topographically to show the physical situations of entities in the restrictor set with respect to each other.

Regarding the use of space, Kelepir (2018) proposes that an existential quantifier SOMEONE which expresses indefinite argument in TİD provides an information on inclusivity and exclusivity with respect to the use of central and lateral signing space. When SOMEONE is signed in the central-low signing space, it means ‘someone who is from here’, which is an indication of inclusivity and when it is signed in the lateral-high signing space, it means ‘someone who is not from here’, which is an indication of exclusivity. Up to now, my study does not show any distinction between inclusivity and exclusivity regarding the use of ALL and ALL_OF_THOSE, however, the difference between the use of space of these two signs paves the way of examining them regarding inclusivity and exclusivity. Since

ALL is signed in the central area, it may presumably express inclusivity while ALL_OF_THOSE may express both inclusivity and exclusivity.

Schlenker et al. (2013) argue for ASL and LSF that the visual modality allows a locus to denote both the restrictor set (e.g. [the set of all the children]) and the maximal set (e.g. [the set of children who cry]) by taking advantage of the use of space since a large circular area signed in the signing space represents the restrictor set and a small circular area signed within it represents the maximal set. This made me question whether there could be a difference between the use of ALL and ALL_OF_THOSE in terms of representing a large restrictor set vs. a specific restrictor set since ALL_OF_THOSE has a demonstrative component, it represents a specific restrictor set in some way.

Similar to TİD, using space to represent the restrictor set is found in other sign languages such as ASL, LSC and LSF. In my study, space allows a quantifier and the restrictor set to be defined in a certain R-locus. However, in these sign languages studied in terms of the use of space, space has different functions such as showing the size of a restrictor set¹³ (Davidson & Gagne, 2014), a contextual restriction¹⁴ (Barberà, 2012), showing a restriction on the use of strong or weak quantifier¹⁵ (Barberà, 2012), expressing inclusivity and exclusivity (Kelepir, 2018), and defining the restrictor set and the maximal set in the signing space (Schlenker et al., 2013).

When the use of space representing the restrictor set is examined in TİD, abstract use of space is seen in the use of ALL_OF_THOSE and THOSE because the

¹³ There is no finding about the size of the restrictor domain related to vertical signing space in TİD in my study.

¹⁴ My study does not show any distinction between the specificity and non-specificity because all of the test items were based on specific entities provided in the context.

¹⁵ For now, there is no study examining the relation between the use of space and strong/weak quantifiers in TİD.

signer assigns a locus for an entity in the signing space and signs ALL_OF_THOSE and THOSE in the same locus to refer back to the entity introduced in the context before. Additionally, ALL_OF_THOSE and THOSE in TlD are similar to ASL ALL_CIRCLE because all of them use horizontal space associated with the anaphoric reference. However, while ALL_OF_THOSE has a quantifier component and signed in the same location with its restrictor in the signing space, THOSE does not have a quantifier component, it is signed in the same location with its antecedent in the signing space by using horizontal space.

Topographic use of space and iconic representation of the arrangement of entities are observed in the use of ALL_OF_THOSE ^SAME because the shape of the movement (linear/straight, circular, arc etc.) is determined by the topographic locations of the depicted entities in actual space, given in the context. Therefore, the position of the entities with respect to each other play an important role for the shape of movement.

CHAPTER 7

CONCLUSION

In this thesis, I have investigated four signs in TID, three of them are related with the universal quantification and the other is simply the demonstrative ‘those’. The main focus of this study was to present the syntactic and semantic properties of these four signs and determine their category. Based on the findings, I have proposed the following:

(i) ALL is a universal quantificational determiner ‘all’ which can be used both pre-nominally and post-nominally. Also, it allows nominal ellipsis.

(ii) ALL_OF_THOSE is a complex sign and a partitive quantificational phrase having both a universal quantificational determiner and a demonstrative components. The quantificational determiner component is the mouthing and the demonstrative component is the location it is signed because it is signed in the same area with its restrictor. The meaning of the phrase is ‘all of those’. It can be used in the pre-nominal and post-nominal position and it allows nominal ellipsis.

(iii) THOSE is a demonstrative pronoun. It cannot be used as a determiner of the countable and uncountable nouns. It is signed in the same loci as its antecedent.

(iv) ALL_OF_THOSE^SAME is an incorporated sign having the handshape of SAME and movement of ALL_OF_THOSE. It means ‘All of those (entities in a circle, line, etc.) are the same’. According to physical situations of the entities with respect to each other, the shape of the movement of this sign changes such as a linear movement for the linearly situated entities and a circular movement for the entities situated in a circular order. Therefore, the shape of the movement is determined by the topographic locations of the depicted entities in actual space given in the context.

There are certain issues that should be investigated in future research.

In section 6.4, the use of space representing the restrictor set was discussed and it was obvious that in some sign languages the signing space has different functions such as restricting the domain size or giving clues about specificity. However, in my data, there is no finding reported on these issues. A special task examining the use of space in terms of domain size restriction or specificity could be prepared and testing these issues would be beneficial for future research.

ALL_OF_THOSE^SAME is proposed to involve incorporation and to have a sentence meaning ‘All of those (entities in circle, line, etc.) are the same’ but one might argue for this sign to be a predicate. Since the data were examined through the picture description task and there was no grammaticality judgement task examining this sign together with the predicates, the most appropriate proposal for this sign is a ‘full sentence’ having an adjectival predicate and a partitive structure. Future research would shed light on this issue.

At a later stage of my thesis study, I observed that ALL_OF_THOSE is sometimes articulated with the mouthing of the Turkish plural suffix [ler] / [lar] as well. Since my testing items do not include this alternation, whether or not ALL_OF_THOSE with the mouthing [ler] / [lar] is a different sign should be investigated in future research.

It is known that universal quantifiers can be either interpreted as distributive or collective. Throughout the thesis, there were no data reporting on this issue because the testing items were not prepared to test this question. Therefore, as a future study, distributivity and collectivity for the signs identified as having a universal quantificational determiner could be done.

Two additional signs, glossed as SOME_1 and SOME_2 which are related to existential quantification are detected during the thesis study. The preliminary results of these two signs are presented in Appendix C. While SOME_2 can be used as a determiner, pronominal and adverbial, SOME_1 is used as a determiner or pronominal. However, future research should be done on this topic to figure out the lexical categories of them.

As a last suggestion, the data in my thesis is based on grammaticality judgement and picture description tasks. Analyzing T1D corpus for a universal quantifier can be useful to check the experimental findings in this thesis. By this way, we can be sure about the specifications on these four signs identified.

APPENDIX A

TESTING ITEMS IN THE GRAMMATICALITY JUDGEMENT TASKS

TI_1) Context: I haven't gotten married yet. I'm the only single person among my friends. My friends are married.

Test item: FRIEND ALL CHILD HAVE.

'All of my friends have children.'

TI_2) Context: I had a very important job. I had to work on the computer.

Test item: OFFICE COMPUTER ALL BROKEN.

'All the computers in the office were broken.'

TI_3) Test item: OTHER UNIVERSITY THOSE_a KNOW NOT BUT BOGAZICI UNIVERSITY LOCATION PROFESSOR ALL ENGLISH KNOW.

'I do not know those other universities, but all the professors at Boğaziçi University know English.'

TI_4) Context: My sibling was going to get married. We made a lot of preparations for her wedding.

Test item: RELATIVE ALL CAME.

'All the relatives came.'

TI_5) a. Context: I haven't gotten married yet. I'm the only single person among my friends. My friends are married.

Test item: FRIEND ALL_OF_THOSE CHILD HAVE.

'All of my friends have children.'

TI_5) b. Context: I haven't gotten married yet. I'm the only single person among my friends. My friends are married.

Test item: FRIEND THOSE CHILD HAVE.

'All of my friends have children.'

TI_6) a. Context: I had a very important job. I had to work on the computer.

Test item: OFFICE COMPUTER ALL_OF_THOSE BROKEN.

'All the computers in the office were broken.'

TI_6) b. Context: I had a very important job. I had to work on the computer.

Test item: OFFICE COMPUTER THOSE BROKEN.

'All the computers in the office were broken.'

TI_7) a. Test item: OTHER UNIVERSITY THOSE_a KNOW NOT BUT BOGAZICI UNIVERSITY LOCATION_b PROFESSOR ALL_OF_THOSE_b ENGLISH KNOW.

'I do not know those other universities, but all the professors at Boğaziçi University know English.' TI_7) b. Test item: OTHER UNIVERSITY THOSE_a KNOW NOT BUT BOGAZICI UNIVERSITY LOCATION_b PROFESSOR THOSE_b ENGLISH KNOW.

'I do not know those other universities, but all the professors at Boğaziçi University know English.'

TI_8) a. Context: My sibling was going to get married. We made a lot of preparations for her wedding.

Test item: RELATIVE ALL_OF_THOSE CAME.

'All the relatives came.'

TI_8) b. Context: My sibling was going to get married. We made a lot of preparations for her wedding.

Test item: RELATIVE THOSE CAME.

‘All the relatives came.’

TI_9) Context: I was very hungry. I went into the kitchen. I saw soup on the countertop.

Test item: SOUP ALL ATE.

‘I ate all of the soup.’

TI_10) Context: I have lots of guests today. I need to make a lot of pasta.

Test item: PASTA ALL PUT..

‘I made all the pasta’

TI_11) Context: I was going to make a cake. I was going to add some butter.

Test item: MISTAKE BUTTER ALL PUT.

‘I put all the butter by accident.’

TI_12) Context: There was a lot of work to do at home. My mother went out.

Test item: IX_{3a} COME UNTIL WORK ALL DO.

‘I did all the work until she came back.’

TI_13) a. Context: I was very hungry. I went into the kitchen. I saw soup on the countertop.

Test item: SOUP ALL_OF_THOSE ATE.

‘I ate all of the soup.’

TI_13) b. Context: I was very hungry. I went into the kitchen. I saw soup on the countertop.

Test item: SOUP THOSE ATE.

‘I ate all of the soup.’

TI_14) a. Context: I have lots of guests today. I need to make a lot of pasta.

Test item: PASTA ALL_OF_THOSE PUT.

‘I made all the pasta.’

TI_14) b. Context I have lots of guests today. I need to make a lot of pasta.

Test item: PASTA ALL THOSE PUT.

‘I made all the pasta.’

TI_15) a. Context: I was going to make a cake. I was going to add some butter.

Test item: MISTAKE BUTTER ALL_OF_THOSE PUT.

‘I put all the butter by accident.’

TI_15) b. Context: I was going to make a cake. I was going to add some butter.

Test item: MISTAKE BUTTER ALL_OF_THOSE PUT.

‘I put all the butter by accident.’

TI_16) a. Context: There was a lot of work to do at home. My mother went out.

Test item: IX_{3a} COME UNTIL WORK ALL_OF_THOSE DO.

‘I did all the work until she came back.’

TI_16) b. Context: There was a lot of work to do at home. My mother went out.

Test item: IX_{3a} COME UNTIL WORK THOSE DO.

‘I did all the work until she came back.’

TI_17) Context: I haven’t gotten married yet. I’m the only single person among my friends. My friends are married.

Test item: ALL FRIEND CHILD HAVE.

‘All of my friends have children.’

TI_18) Context: I had a very important job. I had to work on the computer.

Test item: OFFICE ALL COMPUTER BROKEN.

‘All the computers in the office were broken.’

TI_19) Test item: OTHER UNIVERSITY THOSE_a KNOW NOT BUT BOGAZICI UNIVERSITY LOCATION ALL PROFESSOR ENGLISH KNOW.

‘I do not know those other universities, but all the professors at Boğaziçi University know English.’

TI_20) Context: My sibling was going to get married. We made a lot of preparations for her wedding.

Test item: ALL RELATIVE CAME.

‘All the relatives came.’

TI_21) a. Context: I haven’t gotten married yet. I’m the only single person among my friends. My friends are married.

Test item: ALL_OF_THOSE FRIEND CHILD HAVE.

‘All of my friends have children.’

TI_21) b. Context: I haven’t gotten married yet. I’m the only single person among my friends. My friends are married.

Test item: THOSE FRIEND CHILD HAVE.

‘All of my friends have children.’

TI_22) a. Context: I had a very important job. I had to work on the computer.

Test item: OFFICE ALL_OF_THOSE COMPUTER BROKEN.

‘All the computers in the office were broken.’

TI_22) b. Context: I had a very important job. I had to work on the computer.

Test item: THOSE COMPUTER BROKEN.

‘All the computers in the office were broken.’

TI_23) a. Test item: OTHER UNIVERSITY THOSE_a KNOW NOT BUT
BOGAZICI UNIVERSITY LOCATION_b ALL_OF_THOSE_b PROFESSOR
ENGLISH KNOW.

‘I do not know those other universities, but all the professors at Boğaziçi University know English.’

TI_23) b. Test item OTHER UNIVERSITY THOSE_a KNOW NOT BUT
BOGAZICI UNIVERSITY LOCATION_b THOSE_b PROFESSOR ENGLISH KNOW

‘I do not know those other universities, but all the professors at Boğaziçi University know English.’

TI_24) a. Context: My sibling was going to get married. We made a lot of preparations for her wedding.

Test item: ALL_OF_THOSE RELATIVE CAME.

‘All the relatives came.’

TI_24) b. Context: My sibling was going to get married. We made a lot of preparations for her wedding.

Test item: THOSE RELATIVE CAME..

‘All the relatives came.’

TI_25) Context: I was very hungry. I went into the kitchen. I saw soup on the countertop.

Test item: ALL SOUP ATE.

‘I ate all of the soup.’

TI_26) Context: I have lots of guests today. I need to make a lot of pasta.

Test item: ALL PASTA PUT.

‘I made all the pasta.’

TI_27) Context: I was going to make a cake. I was going to add some butter.

Test item: MISTAKE ALL BUTTER PUT.

‘I put all the butter by accident.’

TI_28) Context: There was a lot of work to do at home. My mother went out.

Test item: IX_{3a} COME UNTIL ALL WORK DO.

‘I did all the work until she came back.’

TI_29) a. Context: I was very hungry. I went into the kitchen. I saw soup on the countertop.

Test item: ALL_OF_THOSE SOUP ATE.

‘I ate all of the soup.’

TI_29) b. Context: I was very hungry. I went into the kitchen. I saw soup on the countertop.

Test item: THOSE SOUP ATE..

‘I ate all of the soup.’

TI_30) a. Context: I have lots of guests today. I need to make a lot of pasta.

Test item: ALL_OF_THOSE PASTA PUT.

‘I made all the pasta.’

TI_30) b. Context: I have lots of guests today. I need to make a lot of pasta.

Test item: THOSE PASTA PUT.

‘I made all the pasta.’

TI_31) a. Context: I was going to make a cake. I was going to add some butter.

Test item: MISTAKE ALL_OF_THOSE BUTTER PUT.

‘I put all the butter by accident.’

TI_31) b. Context: I was going to make a cake. I was going to add some butter.

Test item: MISTAKE THOSE BUTTER PUT.

‘I put all the butter by accident.’

TI_32) a. Context: There was a lot of work to do at home. My mother went out.

Test item: IX_{3a} COME UNTIL ALL_OF_THOSE WORK DO.

‘I did all the work until she came back.’

TI_32) b. Context: There was a lot of work to do at home. My mother went out.

Test item: IX_{3a} COME UNTIL THOSE WORK DO.

‘I did all the work until she came back.’

TI_33) Context: I haven’t gotten married yet. I’m the only single person among my friends. My friends are married.

Test item: ALL CHILD HAVE.

‘All of (them) have children.’

TI_34) a. Context: I haven’t gotten married yet. I’m the only single person among my friends. My friends are married.

Test item: ALL_OF_THOSE CHILD HAVE.

‘All of (them) have children.’

TI_34) b. Context: I haven’t gotten married yet. I’m the only single person among my friends. My friends are married.

Test item: THOSE CHILD HAVE.

‘All of (them) have children.’

TI_35) Context: Professors at Boğaziçi University got their education in the US.

Test item: ALL ENGLISH KNOW.

‘All (of them) know English.’

TI_36) a. Context: Professors at Boğaziçi University got their education in the US.

Test item: ALL_OF_THEM ENGLISH KNOW.

‘All (of them) know English.’

TI_36) b. Professors at Boğaziçi University got their education in the US.

Test item: THOSE ENGLISH KNOW.

‘All (of them) know English.’

TI_37) Context: I have lots of guests today. I need to make a lot of pasta.

Test item: ALL PUT.

‘I made all (of them).’

TI_38) a. Context: I have lots of guests today. I need to make a lot of pasta.

Test item: ALL_OF_THOSE PUT.

‘I made all (of them).’

TI_38) b. Context: I have lots of guests today. I need to make a lot of pasta. Test

item: THOSE PUT.

‘I made all (of them).’

TI_39) Context: I was going to make a cake. I was going to add some butter.

Test item: MISTAKE ALL PUT.

‘I put all (of it) by accident.’

TI_40) a. Context: I was going to make a cake. I was going to add some butter.

Test item: MISTAKE ALL_OF_THOSE PUT.

‘I put all (of it) by accident.’

TI_40) b. Context: I was going to make a cake. I was going to add some butter.

Test item: MISTAKE THOSE PUT.

‘I put all (of it) by accident.’

TI_41) Context: I was very hungry. I went into the kitchen. I saw soup on the countertop.

Test item: ALL ATE.

‘I ate all (of it).’

TI_42) a. Context: I was very hungry. I went into the kitchen. I saw soup on the countertop.

Test item: ALL_OF_THOSE ATE.

‘I ate all (of it).’

TI_42) b. Context: I was very hungry. I went into the kitchen. I saw soup on the countertop.

Test item: THOSE ATE.

‘I ate all (of it).’

TI_43) Context: There is a school trip. We are supposed to notify teachers whether we are going or not. Therefore, we talked to my friends and decided to go.

Test item: THEREFORE IX_{1pl} ALL LIST NAME WRITE. TRIP GO.

‘So, we all wrote out names to the list. We’re going to go to the trip.’

TI_44) Context: We were going to have breakfast together with the (Deaf) association in Polonezköy. I told you three weeks ago.

Test item: YOU ALL FORGET.

‘You all forgot.’

TI_45) Context: There is a school trip. We are supposed to notify teachers whether we are going or not. Therefore, we talked to my friends and decided to go and wrote our names to the list.

Test item: TRIP DAY IX_{3pl} ALL GET READY GO. IX₁ BE.LATE

‘On the day of the trip, they all got ready and left. I was late.’

TI_46) a. Context: There is a school trip. We are supposed to notify teachers whether we are going or not. Therefore, we talked to my friends and decided to go.

Test item: THEREFORE IX_{1pl} ALL_OF_THOSE LIST NAME WRITE. TRIP GO.

‘So, we all wrote out names to the list. We're going to go to the trip.

TI_46) b. Context: There is a school trip. We are supposed to notify teachers whether we are going or not. Therefore, we talked to my friends and decided to go.

Test item: THEREFORE IX_{1pl} THOSE LIST NAME WRITE. TRIP GO.

‘So, we all wrote out names to the list. We're going to go to the trip.

TI_47) a. Context: We were going to have breakfast together with the (Deaf) association in Polonezköy. I told you three weeks ago.

Test item: YOU ALL FORGET.

‘You all forgot.’

TI_47) b. Context: We were going to have breakfast together with the (Deaf) association in Polonezköy. I told you three weeks ago.

Test item: YOU ALL_OF_THOSE FORGET.

‘You all forgot.’

TI_48) a. Context: There is a school trip. We are supposed to notify teachers whether we are going or not. Therefore, we talked to my friends and decided to go and wrote our names to the list.

Test item: TRIP DAY IX_{3pl} ALL_OF_THOSE GET READY GO. IX₁ BE.LATE

‘On the day of the trip, they all got ready and left. I was late.’

TI_48) b. Context: There is a school trip. We are supposed to notify teachers whether we are going or not. Therefore, we talked to my friends and decided to go and wrote our names to the list.

Test item: TRIP DAY IX_{3pl} THOSE GET READY GO. IX₁ BE.LATE

‘On the day of the trip, they all got ready and left. I was late.’

TI_49) Context: There is a school trip. We are supposed to notify teachers whether we are going or not. Therefore, we talked to my friends and decided to go.

Test item: THEREFORE ALL IX_{1pl} LIST NAME WRITE. TRIP GO.

‘So, we all wrote out names to the list. We're going to go to the trip.’

TI_50) Context: We were going to have breakfast together with the (Deaf) association in Polonezköy. I told you three weeks ago.

Test item: ALL YOU FORGET.

‘You all forgot.’

TI_51) Context: There is a school trip. We are supposed to notify teachers whether we are going or not. Therefore, we talked to my friends and decided to go and wrote our names to the list.

Test item: TRIP DAY ALL IX_{3pl} GET READY GO. IX₁ BE.LATE

‘On the day of the trip, they all got ready and left. I was late.’

TI_52) a. Context: There is a school trip. We are supposed to notify teachers whether we are going or not. Therefore, we talked to my friends and decided to go.

Test item: THEREFORE ALL_OF_THOSE IX_{1pl} LIST NAME WRITE. TRIP GO.

‘So, we all wrote out names to the list. We're going to go to the trip.’

TI_52) b. Context: There is a school trip. We are supposed to notify teachers whether we are going or not. Therefore, we talked to my friends and decided to go.

Test item: THEREFORE THOSE IX_{1pl} LIST NAME WRITE. TRIP GO.

‘So, we all wrote out names to the list. We’re going to go to the trip.’

TI_53) a. Context: We were going to have breakfast together with the (Deaf) association in Polonezköy. I told you three weeks ago.

Test item: ALL_OF_THOSE YOU FORGET.

‘You all forgot.’

TI_53) b. Context: We were going to have breakfast together with the (Deaf) association in Polonezköy. I told you three weeks ago.

Test item: THOSE YOU FORGET.

‘You all forgot.’

TI_54) a. Context: There is a school trip. We are supposed to notify teachers whether we are going or not. Therefore, we talked to my friends and decided to go and wrote our names to the list.

Test item: TRIP DAY ALL_OF_THOSE IX_{3pl} GET READY GO. IX₁ BE.LATE

‘On the day of the trip, they all got ready and left. I was late.’

TI_54) b. Context: There is a school trip. We are supposed to notify teachers whether we are going or not. Therefore, we talked to my friends and decided to go and wrote our names to the list.

Test item: TRIP DAY THOSE IX_{3pl} GET READY GO. IX₁ BE.LATE

‘On the day of the trip, they all got ready and left. I was late.’

55) STUDENT ALL COME NOT. UNIVERSITY STUDENT COME. HIGH SCHOOL STUDENT COME NOT.

‘Not all students came. University students came. High school students didn’t come.’

56) a. STUDENT ALL_OF_THOSE COME NOT. UNIVERSITY STUDENT
COME. HIGH SCHOOL STUDENT COME NOT. ‘Not all students came.

University students came. High school students didn’t come.’

56) b. STUDENT THOSE COME NOT. UNIVERSITY STUDENT COME. HIGH
SCHOOL STUDENT COME NOT.

‘Not all students came. University students came. High school students didn’t come.’

57) SOUP ALL EAT NOT. MOTHER FOR HALF LEAVE.

‘I didn’t eat all the soup. I left half of it for my mother.’

58) a. SOUP ALL_OF_THOSE EAT NOT. MOTHER FOR HALF LEAVE.

‘I didn’t eat all the soup. I left half of it for my mother.’

58) b. SOUP THOSE EAT NOT. MOTHER FOR HALF LEAVE.

‘I didn’t eat all the soup. I left half of it for my mother.’

59) BASKET APPLE ALL EAT NOT. TWO LEAVE.

‘I did not eat all of the apples in the basket. I left two.’

60) a. BASKET APPLE ALL_OF_THOSE EAT NOT. TWO LEAVE.

‘I did not eat all of the apples in the basket. I left two.’

60) b. BASKET APPLE THOSE EAT NOT. TWO LEAVE.

‘I did not eat all of the apples in the basket. I left two.’

61) ALL STUDENT COME NOT. UNIVERSITY STUDENT COME. HIGH
SCHOOL STUDENT COME NOT. ‘Not all students came. University students
came. High school students didn’t come.’

62) a. ALL_OF_THOSE STUDENT COME NOT. UNIVERSITY STUDENT
COME. HIGH SCHOOL STUDENT COME NOT.

‘Not all students came. University students came. High school students didn’t come.’

62) b. THOSE STUDENT COME NOT. UNIVERSITY STUDENT COME. HIGH SCHOOL STUDENT COME NOT.

‘Not all students came. University students came. High school students didn’t come.’

63) ALL SOUP EAT NOT. MOTHER FOR HALF LEAVE.

‘I didn’t eat all the soup. I left half of it for my mother.’

64) a. ALL_OF_THOSE SOUP EAT NOT. MOTHER FOR HALF LEAVE.

‘I didn’t eat all the soup. I left half of it for my mother.’

64) b. THOSE SOUP EAT NOT. MOTHER FOR HALF LEAVE.

‘I didn’t eat all the soup. I left half of it for my mother.’

65) BASKET ALL APPLE EAT NOT. TWO LEAVE.

‘I did not eat all of the apples in the basket. I left two.’

66) a. BASKET ALL_OF_THOSE APPLE EAT NOT. TWO LEAVE.

‘I did not eat all of the apples in the basket. I left two.’ 66) b. BASKET THOSE

APPLE EAT NOT. TWO LEAVE.

‘I did not eat all of the apples in the basket. I left two.’

[Some test items were excluded for various reasons.]

71) Context: I had a birthday party. I invited my friends from primary school.

Test item: ALL COME NOT BUT SOME COME.

‘Not all came but some of them came.’

72) a. Context: I had a birthday party. I invited my friends from primary school.

Test item: ALL_OF_THOSE COME NOT BUT SOME COME.

‘Not all came but some of them came.’

72) b. I had a birthday party. I invited my friends from primary school.

Test item: THOSE COME NOT BUT SOME COME.

‘Not all came but some of them came.’

SOME vs. SOMETIMES | Grammaticality Judgement Test

73) PEOPLE VARIOUS SOME PEOPLE CHOCOLATE LIKE SOME PEOPLE
LIKE NOT.

74) PEOPLE VARIOUS PEOPLE SOME CHOCOLATE LIKE PEOPLE SOME
CHOCOLATE LIKE NOT.

75) PEOPLE VARIOUS SOME PEOPLE CHOCOLATE LIKE SOME
CHOCOLATE LIKE NOT.

76) PEOPLE VARIOUS PEOPLE SOME CHOCOLATE LIKE SOME
CHOCOLATE LIKE NOT.

‘There are different kinds of people. Some people like chocolate, some people do
not.’

77) DIFFERENT BOOK THERE_IS. SOME BOOK INTERESTING SOME BOOK
INTERESTING NOT.

78) DIFFERENT BOOK THERE_IS. BOOK SOME INTERESTING BOOK SOME
INTERESTING NOT.

79) DIFFERENT BOOK THERE_IS. SOME BOOK INTERESTING SOME
INTERESTING NOT.

80) DIFFERENT BOOK THERE_IS. BOOK SOME INTERESTING SOME
INTERESTING NOT.

‘There are different kinds of books. Some books are interesting, some are not so.’

81) PEOPLE VARIOUS. SOMETIMES PEOPLE CHOCOLATE LIKE
SOMETIMES PEOPLE CHOCOLATE LIKE NOT.

82) PEOPLE VARIOUS. PEOPLE SOMETIMES CHOCOLATE LIKE
SOMETIMES PEOPLE SOMETIMES CHOCOLATE LIKE NOT.

83) PEOPLE VARIOUS. SOMETIMES PEOPLE CHOCOLATE LIKE
SOMETIMES CHOCOLATE LIKE NOT.

84) PEOPLE VARIOUS. PEOPLE SOMETIMES CHOCOLATE LIKE
SOMETIMES CHOCOLATE LIKE NOT.

‘There are various people. Some people like chocolate, some people do not.’

85) DIFFERENT BOOK THERE_IS. SOMETIMES BOOK INTERESTING
SOMETIMES BOOK INTERESTING NOT.

86) DIFFERENT BOOK THERE_IS. BOOK SOMETIMES INTERESTING BOOK
SOMETIMES INTERESTING NOT.

87) DIFFERENT BOOK THERE_IS. SOMETIMES BOOK INTERESTING
SOMETIMES INTERESTING NOT.

88) DIFFERENT BOOK THERE_IS. BOOK SOMETIMES INTERESTING
SOMETIMES INTERESTING NOT.

‘There are different books. Some books are interesting, some are not so.’

APPENDIX B

DATA ELICITED IN THE PICTURE DESCRIPTION TASKS

THOSE with ellipsis:

Native Participants

- 1) SAME CARD AMERICA CARD THERE_IS IX_a. CL:in arc-order BUT
CL:in arc-order NUMBER DIFFERENT. IX_a DIFFERENT THOSE
THERE_IS.

‘There are same American game cards. They are situated in an arc shape but
the numbers are different. Those are different.’

- 2) BIRD GROUP BLUE LIKE GROUP BIRD FLYING. OTHER_a BIRD EAT
THOSE_a LOOK.FOR FOOD.

‘There is a bird group which is bluish. The birds are flying. In the other
picture, the birds are eating something. Those are looking for food’

- 3) IX_a CHOCOLATE IX_a VIVID COLOR VARIOUS M-E-T-R-O
CHOCOLATE K-T-D-E LIKE COLOR VARIOUS. IX_b COLOR BLACK
COLOR ALL_OF_THOSE^SAME_b THOSE_b TWO PART.

‘There (picture in the left) are various chocolates in a vivid color, such as
‘metro’... They are in black. All of those are the same color. There are two
groups.’

IX_a FRUIT LOCATION_a BOX LOCATION FRUIT COLORFUL
THERE_IS IX_a. OTHER_b LOCATION_b BOX GRAPES GREEN LIGHT
THOSE_b THERE_IS IX_b.

‘This is a fruit box. There are colorful fruits. In the other box, those are light
green grapes.’

- 4) ROSE. IX_a RED DARK THOSE_a. IX_a MUCH THOSE_a

‘There are roses. Those are dark red. Those are too many in number.’

- 5) IX_a BOY FOUR. HAT BLACK TALL. WHITE SHIRT TIE BLACK
JACKET THOSE_a COLOR BLACK WHITE GREY COLOR

‘There are four boys. They have black tall hats, white shirts, ties and black jackets. Those are in black, white and grey’

- 6) BOY GIRL MIXED. LINE LINE GROUP. RED T-SHIRT ALL. THOSE_a
RED T-SHIRT.

‘There are boys and girls. They are in a line and they form a group. All of them have red t-shirts. Those are red t-shirts.’

Non-native Participants:

- 1) IX_a BROWN BOX ALL GREEN GRAPES. OTHER_b BOX THERE_IS.
BOX BROWN LIGHT. THOSE_b COLOR VARIOUS. GREEN PINK
ORANGE.....

‘These are all green grapes in that brown box. There is another box which is light brown. Those (grapes) have various colors such as green, pink and orange.’

- 2) (ROSE).... IX_a THOSE_a IX_a COLORFUL. PINK YELLOW GREEN....
MIXED.

‘Those are colorful and they are pink, yellow and green. They are mixed.’

3) _____/hepsi/

NOTEBOOK PAPER CLIP PAPER IX_{3a} ALL_OF_THOSE_a SAME
COLOR PURPLE THOSE_a PURPLE LIGHT.

‘Notebook... Paper Clip... Papers.... All of those are in the same color,
purple. Those are light purple.’

4) (Nail polish) OTHER_a NAIL DIFFERENT PINKY PURPLE RING FINGER
GREEN MIDDLE FINGER PINK INDEX FINGER YELLOW THUMB
KIRMIZI VARIOUS THOSE_a VARIOUS.

‘The other nails are different. The pinky is purple, the ring finger is green, the
middle finger is pink, the index finger is yellow and the thumb is red. Those
vary in color.’

5)SHORT HAIR THOSE_a....

‘Those have short hair.’

6) TWO BOX. IX_a BOX THERE_IS THOSE_a GRAPES GREEN ALL
BROWN DARK BOX THERE_IS.

‘There are two boxes. Those in that box are all green grapes. This is a dark
brown box.’

7) BELOW_a GRASS THERE_ISN’T. EMPTY. THOSE_a SAND LIKE.

‘Below, there is no grass. It is bare. Those are like sand.’

8) (Bell pepper)... IX_a YELLOW ORANGE PINK LIGHT LIKE THOSE_a....

‘Those are like yellow, orange and light pink.’

9) ROSE SAME. IX-3_a RED THOSE_a. IX-3_b COLORFUL THOSE_b

‘The roses are the same. Those are red. Those are colorful.’

APPENDIX C

SOME_1 AND SOME_2

During the first pilot study, two signs that seem to function as existential quantifiers were identified. These are glossed as SOME_1 and SOME_2. These signs are translated into Turkish as *bazı* ‘some’ and *bazen* ‘sometimes’ by the signers. In the picture description task, it seemed that while the participants were using SOME_1 as a quantificational determiner, they were using SOME_2 both as a quantificational determiner and as a quantificational adverb. (1) below is an example of SOME_2 as a determiner:

(1)



IX(loc)_a

CINEMA

HALL

ALL



GLASSES

NOT.

SOME_2

GLASSES THERE_IS..



.....

SOME_2

GLASSES

THERE_ISN'T.

‘In the cinema hall, not all of them wear glasses. Some of them wear them, some of them don’t.’

(2) below is an example of SOME_2 with the adverbial function.



SOME_2

STAND

SOME_2

SIT

‘She/he sometimes stands, sometimes sits.’

In the grammaticality judgement task, there was a small task examining SOME_1 and SOME_2. Both of these signs were used either in the determiner position or with a nominal ellipsis. The results showed that signers do not differentiate SOME_1 and SOME_2 and they accepted the use of SOME_1 and SOME_2 in the determiner position and as a pronominal. Therefore, the grammaticality judgement task supports the findings of the picture description task. While SOME_1 is used as a determiner or a pronominal, SOME_2 can be used as a determiner, a pronominal or an adverbial. However, future research should be done on this topic to identify the lexical categories of these two signs.

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