QUANTIFIER SCOPE AND PROSODY

IN TURKISH

by

Dursun Altinok

A thesis submitted to the faculty of
The University of Utah
in partial fulfillment of the requirements for the degree of

Master of Arts

Department of Linguistics

The University of Utah

December 2017

The University of Utah Graduate School

STATEMENT OF THESIS APPROVAL

The thesis of **Dursun Altinok**

has been approved by the following supervisory committee members:

Aniko Csirmaz	, Chair	**06/09/2017** Date Approved
Edward Rubin	, Member	**06/09/2017** Date Approved
Benjamin Slade	, Member	**06/09/2017** Date Approved

and by **Patricia Hanna** , Chair/Dean of

the Department/College/School of **Linguistics**

and by David B. Kieda, Dean of The Graduate School.

ABSTRACT

A sentence containing multiple quantifiers can be ambiguous in languages like English. In some other languages, these sentences are unambiguous and the inverse scope reading is not readily available. These languages are called scope rigid languages. In some of these languages, it has been argued that inverse scope becomes available only if a special prosodic contour is imposed on the sentence. For German, this special contour is the rise-fall contour, where the first quantifier is marked with a rising intonation and the second one with a falling intonation. For Russian, this special contour is realized as prosodic prominence on the lower quantifier and a prosodic break between the two quantifiers. This thesis investigates the availability of inverse scope under different prosodic conditions in Turkish, another scope rigid language. In a survey, Turkish native speakers were asked to judge simple SOV sentences with subject and object quantifiers. Results show that the prosodic condition itself does not contribute to the availability of inverse scope, suggesting that Russian and German facts may point to language specific cases. It has also been found that in some quantifier configurations, inverse scope is readily available regardless of prosodic contours. This finding challenges the idea of scope rigidity parameter and suggests that the parameter should be defined over specific constructions rather than entire languages.

TABLE OF CONTENTS

LIST OF FIGURES

Figures

ACKNOWLEDGEMENTS

I would not be able to complete this thesis if it was not for my committee members. My biggest gratitude goes to my chair Aniko Csirmaz. The academic integrity, mentorship, and extensive effort that she has shown not only helped me finish this piece of work, but also provided a role model I shall follow during the rest of my career. Thank you Aniko for being a great mentor to me for two years, and for always pushing me to do better. My other committee members Benjamin Slade, and Edward Rubin. I lost count of the number of hours Ben spent explaining me the semantics of quantifiers. Thank you Ed and Ben for always being kind enough to be kind, open for communication, and generous with your time.

I would also like to thank the faculty members of the Department of Linguistics at the University of Utah. They have always been very kind, very accessible, and thoughtful. Graduate students in the department were always friendly, and helpful. Thank you Cole, Jess, Cate, T.Anne, and Brendan for being awesome.

Without the help of my former mentor Martina Gracanin Yuksek, I could not have had these amazing opportunities that I have had here. Besides being a fascinating scholar and a great mentor, she is one of the nicest people one can ever encounter. Thank you Martina for being incredibly nice and for your support even after my graduation.

CHAPTER 1

INTRODUCTION

One of the most common endeavors of linguistics has been to determine the interaction between suprasegmental components of a sentence (intonation, tone, stress, rhythm) and sentential meaning. These suprasegmental elements generally add information to a given sentence on a pragmatic level. For example, the tone of a question is quite different than the tone of an imperative statement. However, there is more about suprasegmental elements contributing to the general schema. They can sometimes affect the semantics of a sentence, hence sentential meaning. This is generally assumed to be mediated by syntax. An example will suffice to illustrate. Suppose that a manager of a retailer store explain a situation to a police officer about a robbery that has happened recently in a retailer store:

(1) Burglars did not steal two computers.

The statement of the manager is ambiguous. It can mean that there are only two computers that is unstolen, the rest of the computers are (potentially) gone. It can also mean that it is not the case that two computers are stolen, the number of stolen computers may be fewer or more than two. Notice that a situation where burglars manage to steal all but one computers makes the former reading true, while making the latter reading false

with respect to that situation. Based on this ambiguity, how can we account for such cases where suprasegmental components affect semantic denotations? Since it is generally assumed that suprasegmental elements do not denote semantic functions, a direct correspondence between these elements and functions cannot be established. Rather, there must be a medium between these two interacting parts. One camp of linguists proposes that syntax is what mediates between these components. Categorial features that are encoded in syntax can be read both by PF and LF (Chomsky, 1970), and they may have different requirements for each interface. Let us assume that a focus feature enters into syntax from lexicon and marks a certain constituent. When the structure is sent off to PF and LF, the constituent is required to carry main stress at PF, and to carry semantic denotations associated with focus at LF. Even though the structures at the two interfaces undergo different changes, it does not mean that they directly interact. The idea of categorical features is quite popular, but there have been alternative proposals about the interaction of interfaces based on some theoretical and philosophical concerns related to the architecture of grammar. Reinhart (2006) argues that Chomsky's proposal only works in a perfect structure of grammar where all interfaces are transparent to each other. She claims it is possible that language is not optimal[1]. Let us take the focus example given above. A focus feature, which is transferred all the way from lexicon to PF-LF interfaces, is simply inserted there to satisfy the need of other cognitive systems: perceptual-auditory and conceptual-intonational. This kind of explanation suggests that different interfaces are visible to each other, in other words, they are transparent. Reinhart believes that this transparency is too much for limited human computational capacity.

[1] Optimality here refers to how well different computational systems interact with each other and respond to each other's needs.

She proposes an alternative system where interfaces are not transparent and whenever there is a mismatch between the output of one system and the requirement of another, some kind of repair mechanism eliminates this mismatch. The (un)availability of different scope interpretations are handled by such a repair mechanism rather than the use of categorial features in Reinhart's system. Brody (1995) approaches the issue more radically. He gets rid of syntactic component altogether and provides a direct mapping between PF and LF. Zubizarreta (1982) argues that different components of grammar are computed parallel to each other, and some (see Bennett et al., 2016) claims that syntax is able to look forward to PF and LF, so it manipulates the structure based on needs of both. Jackson (2005) proposes a simple change on the T-model. He claims that the interaction between PF and LF is not mediated through some general concept of syntax, but it is rather done by Information Structure (IS).

One of the most commonly addressed interactions between prosody and meaning is the relation between the quantifier scope and prosody. Many studies in the literature investigated how different prosodic patterns affect quantifier scope readings. This interaction is addressed by many studies both theoretically and cross-linguistically. Languages such as English (Jackendoff, 1972), German (Büring, 1997; Krifka, 1998), Japanese (Hara, 2003), and Russian (Luckhina and Ionin, 2015; Antonyuk-Yudina, 2011) are argued to show different scope relations under different prosodic conditions. This thesis investigates the existence of this interaction both theoretically and contrastively within another language, Turkish. It tests whether Turkish allows inverse scope under a neutral or a marked prosodic condition (where the object is focused). The outline of the thesis is as follows: Section 2 briefly summarizes Turkish quantifier properties and

information structure. Section 3 introduces some relevant crosslinguistic facts. Section 4 lays out the questionnaire, results, and the analysis. Section 5 discusses the results from a theoretical and a crosslinguistic perspective. Section 6 concludes the thesis.

CHAPTER 2

QUANTIFIER, SCOPE AND INFORMATION STRUCTURE IN TURKISH

2.1. Turkish Quantifiers

Universal quantifiers are expressed with *her* 'every', *herbir* 'each', *tüm* 'all', *bütün* 'all' and *hepsi* 'all'. *Her* corresponds to 'every' and it is obligatorily distributive (Özyıldız, in prep). (2) shows that the quantifier is not compatible with collective verbal predicates. The universal quantifier *her* can be modified with any numeral, including singular *bir* 'one' (3) – (4).

(1) Her öğrenci dersi kaçır-dı-(*PL).
Every student class-ACC miss-PAST-(*PL)
'Every student missed class.'

(2) * Her öğrenci toplan-dı.
Every student gather-PAST
'Every student gathered.'

(3) Her (bir) öğrenci ders-i kaçır-dı.

Every (one) student class-ACC miss-PAST.

'Each and every student missed class.'

(4) Her on öğrenci bir ögretmen-le beraber müze-ye gir-di.

Every ten student one teacher-with together museum-DAT enter-PAST

'Every (group) of ten students entered the museum with one teacher.'

Among the remaining universal quantifiers, *tüm* and *bütün* can be with a distributive or a collective interpretation. They only differ in that only the former can be used in genitive constructions (5) - (6). *Hepsi* is obligatorily used in genitive constructions (7) - (8).

(5) Tüm/ Bütün öğrenci-ler dersi kaçır-dı.

All student-PL class-ACC miss-PAST

'All students missed class.'

(6) Ögrenci-ler-in tüm-ü/ *bütün-ü dersi kaçır-dı.

Student-PL-GEN all-POSS class-ACC miss-PAST

'All students missed class.'

(7) * Hepsi öğrenci-ler ders-i kaçır-dı.

All student-PL class-ACC miss-PAST.

'All students missed class.'

(8) Öğrenci-ler-in hepsi dersi kaçırdı.

Student-PL-GEN all-POSS class-ACC miss-PAST

'All students missed class.'

Existential quantifiers are expressed with *bazı* 'some', *kimi* 'some' and *bir* 'a/one'. In general, *bazı* and *kimi* can be used interchangeably (9) – (10). With singular nouns, *bazı* can only be used in generic contexts (11) (Özyıldız, in prep).

(9) Bazı öğrenci (-ler) ders-i kaçır-ır.

Some student-(PL) class-ACC miss-AOR

'Some students miss classes.'

(10) Kimi öğrenci(-ler) ders-i kaçır-dı.

Some student-(PL) class-ACC miss-PAST

'Some students missed the class.'

(11) Bazı öğrenci*(-ler) ders-i kaçır-dı.

Some student-PL class-ACC miss-PAST

'Some students missed the class.'

Existential *bir* can express either a numeral 'one' or an existential 'a' interpretation. While the numeral interpretation gets 'exactly one X' meaning, the existential interpretation can be paraphrased as 'an indefinite/unspecific X'. This property

can be observed in other languages such as Chinese. Tsai et al. (2014) and Scontras et al. (2014) shows that Chinese *yi* is ambiguous between a quantificational or a numeral reading. Scontras et al. (2014) tests whether the blocking of inverse scope is caused by the ambiguity and finds that the ambiguity itself is not responsible for unavailability of inverse scope. Based on Scontras et al. (2014), this thesis assumes that this ambiguity in Turkish does not give rise to unexpected scope relations. Though numeral/existential forms of '*bir*' in Turkish seem identical, they are marked with different prosody. The numeral part is stressed in numeral interpretation (12) while the noun is stressed in quantifier interpretation (13). Capitalization indicates stress in the following examples.

(12) X: Kaç öğrenci geldi?

'How many students showed up?' .

Y: BİR öğrenci. #bir ÖĞRENCİ

'ONE student' 'one STUDENT'

(13) X: Sana telefon geldi bugün.

'There was a phone call for you today'

Y:Kim aramış?

'Who called?'

X:Bir ÖĞRENCİ. #BİR öğrenci

'a STUDENT' 'A Student'

Existential *bir* is highly productive in Turkish. It can combine with other words to

form compound quantificational words (Özyıldız, in prep):

(14) Kaç (how many) *birkaç* (a few)

Takım (team) *birtakım* (some/several).

Az *(few/little)* *biraz* (just a little)

Çok (many/much) *birçok* (many a)

Sürü *(herd)* *birsürü* (a lot)

Turkish does not have negative quantifiers comparable to the English 'no one' or 'nothing'. Instead, a negative polarity item (NPI) is used in a negative environment (Özyıldız, in prep):

(15) Hiç-bir öğrenci dersi kaçır-*(ma)-dı.

Any-one student class-ACC miss-*(NEG)-PAST.

'No student missed the class.'

2.2. Quantifier Scope in Turkish

Turkish is claimed to be scope rigid, meaning that a sentence containing multiple quantifiers is unambiguous (Kural, 1992; Kelepir, 2001). A structurally lower quantifier[2] cannot take scope over a higher one, and inverse scope is not available in these constructions. Sentence (16) cannot mean that there are three exams that every student

[2] Highness-lowness is determined by c-command. A c-commanding constituent is higher than the c-commanded one. For arguments against the relationship between c-command and scope, see Barker (2012).

passed. It is acceptable in a context where each individual passed at least three different exams.

(16) Her öğrenci üç sınav-ı geçti. (every > three)
Every student three exam-ACC pass-PAST *(three > every)
'Every student passed three exams.'

The prohibited inverse scope reading in (16) can be obtained if two quantifiers scramble in a way that their c-command relations change. The scrambled object takes scope over the subject in (17). It can mean that there are exactly three exams (e.g. Math, Biology, Geography) that every student passed. It is infelicitous in a context where each individual passed at least three different exams but there is no single exam that everyone passed.

(17) Üç sınav-ı her öğrenci geçti. (three > every)
Three exam-ACC every student pass-PAST, *(every > three)
'Every student passed three exams.'

Scope rigidity can be violated in certain constructions. When the lower quantifier is an accusative marked indefinite[3], inverse scope is available (18).

[3] The accusative case is optional in most cases except when the object is quantified universally, in that case it is obligatory. The obligatoriness of such objects is attributed to specific nature of them. See Enç (1991) for a comprehensive discussion of the phenomenon. Case marking does not interact with other factors such as animacy, gender, or plurality etc.

(18) Her öğrenci bir masa**-yı** taşı-dı. (every > a)

Every student a table-ACC carry-PAST (a > every)

'Every student carried a table'

If the indefinite is not marked with ACC-case (19), or it is not the lower quantifier (20), inverse scope becomes unavailable again. (Enç, 1991; Aygen-Tosun, 1999; Kelepir, 2001).

(19) Her öğrenci bir masa taşı-dı. (Every > A)

Every student a table carry-PAST *(A > Every)

'Every student carried a table'

(20) Bir masa**-yı** her öğrenci taşı-dı. (a > every)

A table-ACC every student carry-PAST *(every > a)

'Every student carried a table'

Suppose that ten tables arrive to a school and ten students volunteer to carry them. This reading is felicitous with (18) and (19), and it is infelicitous with (20), as expected. The reading corresponds to surface scope of (18) and (19), and the unavailable inverse scope of (20). Now, consider the other scenario. A big table, which cannot be carried by a single student, arrives to a school. Some students gather to carry this table. The sentence (19) is not available for this context, because the context corresponds to its inverse scope. Sentences (18) and (20) are felicitous with the context. The well-formedness of (20) is

expected since it follows from scope rigidity. The availability of (18) with this context, on the other hand, is caused by the existence of ACC-marked indefinite.

Enç (1991) provides an account the ambiguity of (18) by referring to specificity. She assumes specificity in Turkish is indicated with case marking: indefinite objects are specific and they are marked with ACC-case. Following Fodor and Sag (1982), she further assumes that a specific NP takes wide scope over at least one operator. In sentence (18), the specific object takes scope over universal operator, making inverse scope available. Though they have a tendency to take wide scope, specific NPs can also take narrow scope in the presence of adequate context[4]. The object in sentence (19) cannot take wide scope, as it is not specific.

Kelepir (2001) presents a different account to account for the wide-scope reading of ACC-marked indefinites in (18). Arguing against the specificity account[5], she claims that this unexpected reading arises from ACC-marked indefinites being choice function variables (Reinhart, 1997; Kratzer, 1998). Reinhart defines choice functions as follows: "A function f is a choice function (CH(f)) if it applies to any non-empty set and yields a member of that set.". Crucially, choice function variables can be bound by the existential operator, which can appear higher than other quantifiers. When the existential operator appears higher than the subject quantifier, the ACC-marked indefinite object takes wide

[4] The tendency for wide-scope reading can be explained by pragmatic tendencies. Following Grice (1975), Enc argues "specific NPs carry a generalized implicature of wide scope when they are uttered out of the blue, since the speaker has the option of using nonspecific NPs for unambiguously narrow scope readings. This explains why specific NPs are generally assumed to have wide scope when an operator is present".
The requirement of adequate context for the narrow scope reading is related to the definition of specificity. Specificity is defined over members of a previously given set, and this set cannot be formed in the absence of a context when the sentence is out of the blue. In order for an NP to be a specific, it needs to appear in a context, hence some adequate context is required.

[5] See Kelepir (2001) Chapter 3 for arguments against specificity account.

scope. If the existential operator appears lower, the object takes narrow scope. Kelepir does not include other quantificational factors or operators like the distributive operator, so it is an open question whether the analysis would be affected if additional quantificational forces were also considered.

This unexpected behavior of ACC-marked indefinites can be observed with any indefinite quantifier. Examples (21) and (22) show similar scope facts; here subjects are proportional quantifiers and objects are numeral expressions.

(21) Öğrencilerin yarısı iki masa taşı-dı. (half > two)
Students-GEN half-POSS two table carry-PAST *(two > half)
'Half of the students carried two tables.'

(22) Öğrencilerin yarısı iki masa-yı taşı-dı. (half > two)
Students-GEN half-POSS two table-ACC carry-PAST (two > half)
'Half of the students carried two tables.'

2.3. Turkish Information Structure

Information structure (IS) is an aspect of Turkish that is often discussed, but not well established. Researchers argue for different analyses of Turkish information structure (Kornfilt, 1997; Göksel, 1998; Kural, 1992). Some of these analyses are contradictory. One of the recent works done in this area is (İşsever, 2003). It has an extensive summary of previous discussion and it argues for a novel approach to the IS structure in Turkish. İşsever (2003) assumes Vallduví's (1992) tripartite distinction in the

IS configuration. Vallduví assumes a binary system with one of the components further divided into two, yielding the following IS packaging:

(23) S= {FOCUS, GROUND}

GROUND= {LINK, TAIL}

(Vallduví, 1992)

Focus constitutes the only informative part of the sentence. It is the new information that contributes to the hearer's knowledge. GROUND is defined as "the complement of the focus" and refers to given information that the hearer and the speaker already share before utterance. The ground is further divided into two components: the LINK, and the TAIL. The link is an element directing the hearer to a given information in the hearer's knowledge store, and linking that information up with the object of thought (Reinhart, 1982; Vallduví, 1992). The link is also known the Topic. Though Vallduví has concerns related to using link and topic interchangeably, İşsever uses topic with reference to link. Tail is defined as "the complement of the link" and it is the nonfocal, nonlink part of the sentence. İşsever further splits focus into P(resentational) focus and C(ontrastive) focus. P-Focus presents new information in a sentence (24). C-focus performs exhaustive identification of individuals/subsets from a set which already exists in the hearer's knowledge store (25).

(24) Who did you see at the meeting? I saw **JACK** (P-focus).

(25) Was it John or Mary that won the bet? It was **MARY**(C-focus).

According to İşsever, each of these IS elements is restricted in its distribution within a sentence in Turkish. This distribution is illustrated in Figure 2.1.[6]

The superscript *n* indicates that the element can be iterated and parentheses indicate optionality. The postverbal area is associated with tail. Focus or topic cannot appear post-verbally. The tail can also appear in the middle of the sentence. The sentence-initial position can only host topics and c-foci. Topics can only appear in this position, while c-foci have a less restricted distribution. A p-focus can only appear on the verb, or in an immediate preverbal position. An example is given in (27). The subject is the c-focus, the direct object is the p-focus, the indirect object and the instrumental adjunct are tails. All of them align with their designated positions.

(27) A: What did Hasan say to my son with anger?

B: MEHMET senin oğluna YALANLAR söylemiş kızgınlıkla.

Mehmet your son-DAT lie-PL tell-EVID anger-INST

Mehmet told lies to your son with anger.

Another important issue is how focus appears on a designated constituent. There are three ways in which a focused constituent can be identified. Two of them involve syntactic movements and one is performed without any movement.

The first way is to associate focus to a designated constituent in-situ. English

[6] The unmarked word order is Subject-Object-Verb in Turkish.

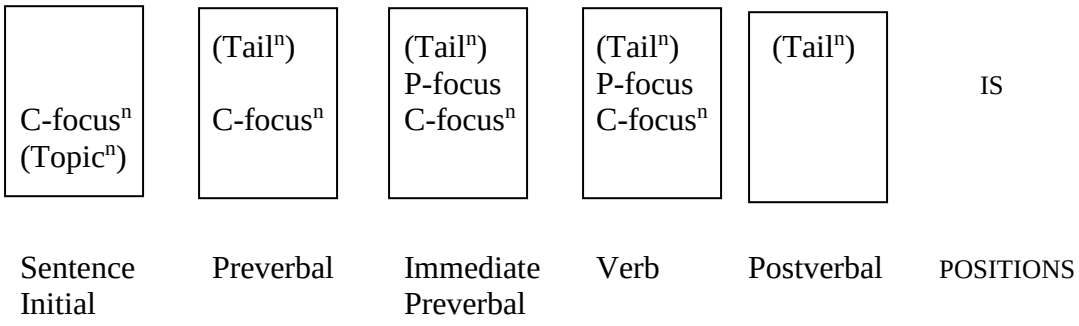


Figure 2.1. IS Distribution in Turkish

typically identifies foci exclusively by means of prosody. (Selkirk,1984). The focus marked constituent bears the prosodic prominence and focus strategy does not change the constituents position in the structure. This is illustrated in (28) below. Two different constituents are marked with focus in (28) but both focused constituents appear in the same position as in their non-focused neutral positions.

(28) a) John ate FIVE APPLES in a single meal.

b) John ate five apples IN A SINGLE MEAL.

Focused constituents may also move to a designated focus position. The focus marked constituent undergoes movement to a focus position and it bears the prosodic prominence in that position. Hungarian is argued to employ the focus movement strategy shown in (29). In Hungarian, focus constituents move to immediately preverbal position.

(29) a. JÁNOS mászta meg a legmagasabb hegy-et.

John climbed pfx the highest mountain-acc

'JOHN climbed the highest mountain'

b. *János mászta meg a LEGMAGASABB HEGY-ET.

John climbed pfx the highest mountain-acc

'John climbed THE HIGHEST MOUNTAIN'

(Examples taken from Szabolcsi, 1986)

There is a third way to assign focus, where non-focus marked constituents move away from a focus position until the focus marked element appears there. Catalan is claimed to have this type of remnant movement to assign focus (Vallduví, 1992).

For Turkish, there are diverging claims about the strategy used for focus assignment. Some linguists (Demircan, 1996; Hoffman, 1995; Kılıçaslan, 1994; Kennelly, 1997; Kornfilt, 1997) assume that Turkish behaves similarly to Hungarian and focus marked constituents move to a designated focus position. This position is claimed to be the immediately preverbal position (30). The counterpart of a wh-phrase, which is focused, appears in the preverbal position unlike its correspondent, wh-phrase.

(30) 'Who is going to take you to the park on the condition that you behave well?'

Akıllı durmam şartıyla beni parka **BABAM** götürecek.

Well-behaved stay-2SG condition-INST I-ACC park-DAT **my father** take-FUT

'My father is going to take me to a park on the condition that I behave well.'

Others (Göksel 1998, Göksel and Özsoy 1998) argue that Turkish resembles English; both employ only prosody to indicate focus (31). The focus in (31) is not in the

preverbal position and it appears in the same position as its wh-counterpart.

(31) A: Who finished the race first?

B: Yarışı AHMET birinci bitirdi.

Race-ACC Ahmet first finish-PAST.

'Ahmet finished the race first.'

In addition, there is another camp which argues for a Catalan type of remnant movement (Kural 1992, Vallduví and Engdahl 1996).

İşsever (2003) proposes an alternative to this discussion. He argues that different strategies are used to mark different type of foci. P-focus and c-focus are defined on their accessibility from the context. The former is not accessible from the context, but the latter is. He claims p-focus is identified by focus movement to a preverbal position, and c-focus is identified by focus in-situ. If the wh-phrase in the context is completely unknown, as in (13), then focus movement is the most natural answer for the question (13a). Focus in-situ seems odd (13b).

(13) Beni kim sordu?

I-ACC who ask-PAST

Who asked for me?

a. Seni RECEP sordu.

You-ACC RECEP ask-PAST

'Recep asked for you.'

b. ? RECEP seni sordu.

RECEP you-ACC ask-PAST

'Recep asked for you.'

If the answer is a member of a set provided by the context, and the question asks for exhaustive identification; focus-in situ is the ideal answer (14a). Focus movement to the preverbal position sounds unnatural in this case (14b).

(14) Beni kim sordu? (Ahmet mi Recep mi?)

I-ACC who ask-PAST (Is it Ahmet or Recep?)

Who asked for me?

a. RECEP seni sordu. (Ahmet baskasini)

RECEP you-ACC ask-PAST (Ahmet asked for someone else)

'Recep asked for you.

b. ?Seni RECEP sordu.

You-ACC RECEP ask-PAST

'Recep asked for you.'

CHAPTER 3

CROSS-LINGUISTIC DATA

The availability of inverse scope under different conditions has been discussed for various languages including Greek (Baltazani, 2002), Chinese (Tsai, et al., 2014; Scontras et al., 2014), Russian (Ionin, 2001; Antonyuk 2006, 2011, 2015; Ionin and Luckhina, 2014; Stoops and Ionin, 2012), Japanese (Hara, 2003), German (Büring, 1997; Krifka, 1998; Bobaljik and Wurmbrand, 2012), Hungarian (Szabolcsi, 2012; É. Kiss, 2002). This section offers an overview from two languages, Russian and German. These languages are similar to Turkish in that they are scrambling languages with free word order, and they are claimed to be scope-rigid.

3.1 Russian

3.1.1. Stoops and Ionin (2012)

Stoops and Ionin (2012) tests the availability of inverse scope based on the word order. They test the neutral SVO and scrambled OVS word orders in Russian. Using two different matching tasks (picture, and context), they ask subjects to determine the grammaticality of sentences depending on context or picture. An example of a test item from context sentence matching task appears below:

(1) *test story, universal-subject & indefinite-object*

A lot of adults and children came to a party. There were 3 boys – Sasha, Petya, and Vanya and 4 girls – Lena, Katya, Masha, and Nina. Because there were many adults, not all the kids saw each other. Sasha saw only Lena. Petya saw only Katya. Vanya saw only Masha. None of the boys saw Nina.

a. Každyj mal'čik uvidel odnu devočku.
   Every boy-NOM saw one girl-ACC
   'Every boy saw one girl.'
   surface-scope: TRUE, inverse-scope: FALSE

b. Odnu devočku uvidel každyj mal'čik.
   One girl-ACC saw every boy-NOM
   'One girl saw every boy.'
   surface-scope: FALSE, inverse-scope: TRUE

Neither experiments show significant effect in quantifier type, so quantifier type does not play any role in determining scope relations. Word order, on the other hand, is significant. Subjects allow inverse scope in both SVO and OVS sentences (cf. Ionin, 2003). There is a tendency for wide-scope reading of the object in OVS word order more easily than in SVO order in the first experiment. SVO sentences show a high preference for surface scope reading. This difference between the two experiments is attributed to different levels of information structure (IS). In the first study, context is used to elicit data and, it provides IS configurations for the target sentence. In SVO sentences, the preverbal subject is marked as topic, making inverse scope impossible (in support of Ionin (2002)). In the second experiment, the pictures do not provide such IS configurations, so SVO sentences do not show a significantly higher preference for

surface scope.

3.1.2. Ionin and Luchkina (2014)

This study investigates how prosody, information structure and word order affect the availability of inverse scope. For languages such as German and Japanese[7] (Büring 1997, Krifka 1998, Bobaljik and Wurmbrand 2005), it is claimed that contrastive topic on the subject and focus on the object give rise to a marked prosodic pattern (rise-fall contour) and it is this configuration that allows inverse scope. Based on this observation, Ionin and Luchkina look at the role of contrastive focus and prosody on the quantifier's ability to take wide scope. They ask Russian speakers to match spoken sentences with a context or with a picture. They manipulate five factors: word order (SVO, OVS), quantifier configuration (universal, existential), picture type (subject-oriented, object oriented), prosody (neutral intonation, contrastive stress), and context (presence, absence). Results indicate a strong surface scope preference for SVO word order with neutral prosody. (Ionin 2003, Stoops and Ionin 2013). However, contrastive stress on the quantifier facilitates inverse scope in OVS but not in SVO. It is also argued that context does not have any effect on the availability of inverse scope. There is no difference between identical sentences sentence that differ in the availability of context. This entails that information structure can be recovered from prosody, without necessarily applying context.

[7] See section 2.2 for German background.

3.1.3 Luckhina and Ionin (2015)

Luchkina and Ionin (2015) experimentally tests the availability of inverse scope in Russian under different conditions (information structure, prosody, and word order). They also aim to determine the acoustic properties under which inverse scope is possible and the effect of context in receiving inverse scope. They conduct an auditory sentence – picture verification task (SPVT). Sentences are parametrized in two ways: quantifier configuration (indefinite subject, universal object/ universal subject, indefinite object) and word order (SVO or OVS sentences). They also manipulate target sentences under two conditions (information structure, and prosodic prominence) yielding four different SPVT (2):

(2) Baseline: Sentence produced with neutral prosody and without a context.

Emphasis: Sentence produced with prosodic prominence on the indefinite quantifier and without a context.

Topic: Sentence produced with neutral prosody and with a context that gives topic interpretation to the indefinite quantifier

Focus: Sentence produced with prosodic prominence on the indefinite quantifier and with a context that gives contrastive focus interpretation to the indefinite quantifier.

Results show that inverse scope is available when the indefinite quantifier is preverbal (as in OVS) and prosodically prominent. Each condition, individually, is not enough to get inverse scope. Rather, it is the combination of these factors that makes

inverse scope possible. It may be the case that the prosodic prominence is an outcome of information structure (IS), so IS indirectly affects scope interpretations. This is the kind of reasoning put forward by Baltazani (2002) for Greek. She claims that prosody itself does not give rise to inverse scope in Greek. Rather, it is the combination of prosody and information structure that makes different scope interpretations possible. Luckhina and Ionin (2015) argues against such an approach to Russian facts. They claim that the possibility of inverse scope is the same in Emphasis SPVT, (where no overt information structure is involved) and Focus SPVT (where context provides focus interpretation to the indefinite QP). The existence of focus does not affect the availability of inverse scope.. They do not, however, completely contradict Baltazani due to their claim that "Russian speakers access inverse scope readings from contrastive prosody alone, and reconstruct the IS from prosody" (Ionin and Luckhina, 2014).

3.1.4. Antonyuk-Yudina (2011)

Building on the idea that Russian freely allows inverse scope like English (Antonyuk 2006, 2009), this study claims that the absence of inverse scope observed in Russian SVO sentences with double quantifiers may be as a result of the prosody that Russian speakers impose on the structure. The prosodic pattern may be creating a bias for surface-scope reading, blocking inverse scope. This prediction contrasts with other papers investigating the role of prosody on scope interpretations. Mostly for German data, it is discussed that the marked prosodic patterns that imposed on quantifiers allow inverse scope readings (Büring 1997, Krifka 1998). Luckhina and Ionin (2015) also argues similar phenomena for Russian. This paper, though, predicts that prosody prevents

inverse scope readings.

In order to test the prediction, she asks Russian speakers to read sentences multiple quantifiers. The study manipulates two conditions yielding a four-way distinction: word order (SVO-OVS) and scope (surface-inverse). The 'scope' condition is provided by a context before the target sentence. The prosodic pattern of each sentence is extracted and compared. Results show that the prosodic properties induced for surface-scope readings are marked with an intermediate break and a contrastive pitch accent on the object quantifier. The prosody for inverse scope reading emerges with a downstepped pitch accent. Contrary to surface-scope, the object does not bear a pitch accent in inverse scope. As for the prediction, she argues that the intermediate break observed in surface-scope interpretation is an insertion of an intermediate phrase boundary. This boundary separates subject from the rest of the predicate, disallowing inverse scope in SVO order.

However, one finding reported in the study challenges the idea that Russian is not a scope-rigid language. Antonyuk-Yudina notes that "…sentences embedded in surface-scope-only contexts were disambiguated successfully in favor of surface scope most of the time (77%) while sentences where the context biased toward inverse scope were successfully disambiguated in favor of inverse scope in only 17% of cases …" If it is true that Russian freely allows inverse scope, it is interesting why subjects performed poorly in disambiguating inverse scope. Notice that it does not have anything to do with the presence of intermediate break because inverse scope biasing prosody does not have such a break. I think this finding challenges the analysis drawn in the study, and the author unfortunately does not address to the issue.

3.1.5. Antonyuk (2015)

Antonyuk bases her dissertation on the insights of Bobaljik and Wurmbrand (2005). They argue that languages do not differ in whether quantifier raising (QR) is available. Inverse scope arises if QR applies, and QR is not available in languages that show scope rigidity. According to Bobaljik and Wurmbrand (2005), QR is not a transformation inherent in some languages. Rather it depends on various other factors such as scrambling. The availability of QR, then, should be considered with respect to each particular construction. In their view, it is possible that in a given language some constructions allow QR, while others do not. An example is given in (3) from Russian. While a transitive SVO sentence (3a) does not allow QR, the inverse linking[8] in (3b) shows obligatory QR:

(3) a. [Odin mal'čik] poceloval [každuju devočku]. (Ionin 2001)
One boy-NOM kissed every girl-ACC
'One/a certain boy kissed every girl' (one > every),*(every > one)

b. [Kakoj-to žitel' [každogo iz gorodovj]] preziraet egoj
[[Some dweller-NOM] [every from cities-GEN]] despises it-ACC
'Someone from every city despises it' *(one > every), (every > one)

If it is indeed the case that QR is not parametrized across languages, it should be allowed in all languages, and banned only in specific constructions. Since QR reflects different scope relations, it also means that inverse scope should be possible in all

[8] Inverse linking refers to constructions where one quantifier phrase is embedded in another.

languages, only constrained by construction specific requirements. The oft-used term ‘scope freezing languages’ should be replaced with ‘scope freezing constructions’.

Independent of Bobaljik and Wurmbrand’s observation, Antonyuk claims that Russian is not a scope-freezing language, she even goes further by claiming that Russian behaves like English in the availability of taking inverse scope (contra Ionin 2001). She gives evidence for obligatory inverse scope from Antecedent Contained Deletion (ACD)[9], Inverse Linking, Weak Crossover violation constructions. The thesis claims that free word order languages are not necessarily scope-frozen (cf. Bobaljik and Wurmbrand (2012)).

If Russian is not an inherently scope-frozen language, the question is how we can derive those constructions where inverse scope is not possible. For that, Antonyuk puts forward *Scope Freezing Generalization (SFG).* It derives scope freezing effects from those instances where “one QP raises over another to a c-commanding position as a result of a single instance of movement”.

3.1.6. Interim Summary

Different studies in this section investigates the availability of inverse scope in different conditions. It is fair to mention two different camps, which have different assumptions about the existence of inverse scope. Ionin and her colleagues assume that Russian is scope rigid (Ionin, 2001) and it does not allow inverse scope in sentences with neutral prosody and word order. Based on this assumption, they tested the availability of inverse scope based on the word order (Stoops and Ionin, 2012), information structure

[9] See (Sag, 1976) for ACD constructions.

and prosody (Luckhina and Ionin, 2015; Ionin and Luckhina, 2014). Overall, quantifier type does not show any effect in scope relations. Word order and prosody together are effective to receive inverse scope (Luckhina and Ionin, 2015; Ionin and Luckhina, 2014), though neither of them are significant separately. Similarly, word order is effective only if it is presented in the presence of a context. (Stoops and Ionin, 2012). These results suggest that word order must be manipulated along with either context and prosody to receive inverse scope. If we assume that context or prosody are elements that makes information structure available to subjects, it means that word order and information structure must be manipulated in order to get inverse scope in Russian.

The other camp, Antonyuk, claims that inverse scope is readily available in Russian without any manipulation of word order, information structure etc. Scope freezing is not a language parameter, but a construction-specific phenomenon. Some constraints do not allow inverse scope while others do. She also claims prosody blocks scope readings in some configurations. By putting an intermediate phrase boundary between two quantifiers, Russian speakers are creating an island for lower quantifier to QR. I think couple of questions need addressing for this account. First, why does a prosodic break have to correspond to the notion of syntactic islands? Syntactic islands can surface independent of prosodic properties, and every intonational break does not mark a syntactic island. The relation seems weak. Second, Antonyuk shows that there is a significant difference between two readings even if an intermediate prosodic break is absent. If Russian readily allows inverse scope, why is there such a difference even in the absence of the blocking element? Comparing the camps, Ionin's approach explains the second problem stated above. Even in the absence of intermediate prosodic break, there is

a significant difference in scope judgements and it may be causing from Russian's being a scope-rigid language. When one tries to apply Antonyuk's assumption to the data Ionin uses, a problem arises. According to Antonyuk, scope freezing is caused by a single movement resulting in a QP ending up higher than the other. Taking SVO order as neutral and OVS as scrambled, the scrambling operation must yield scope freezing, making inverse scope impossible. However, the experiments show otherwise: Inverse scope becomes available if word order and information structure is manipulated. This contrast seems problematic for Antonyuk's camp. These concerns may lead one to question the analysis of the second camp but certainly more experimental work is needed before asserting any conclusion. Table 3.1 below summarizes Russian studies discussed in this section.

Table 3.1 Summary of experimental studies in Russian

Study	What is tested	Results
Luchkina & Ionin (2015)	Availability of inverse scope under prosody, information structure, and word order	Inverse scope is available with OVS order and focus on object
Stoops & Ionin (2012)	Availability of inverse scope under different word orders	Inverse scope is more available in OVS than SVO
Ionin & Luchkina (2014)	Availability of inverse scope with contrastive focus and prosody on the object	Contrastive stress on the object and OVS order enables inverse scope.
Antonyuk (2015)	QR Parameter	QR should not be parametrized across languages, scope freezing is specific to constructions.
Antonyuk-Yudina (2011)	Whether the prosody disallows the readily available inverse scope	The intermediate prosodic break between S and O (creating phrase boundary) disallows inverse scope in SVO.

3.2 German

This section relates to German facts on scope inversion under marked prosodic conditions. Two accounts are summarized in this section: Büring (1997) and Krifka (1998). Both studies are similar in that they focus on scope inversion in a specific prosodic contour, but they refer to different structures for explanation and they have different background assumptions about scope properties in German. Büring is interested in constructions where one of the quantifiers is universal or necessity modal and the other one is negation (4). He claims that sentences with multiple quantifiers such as (4) is ambiguous between different scope interpretations. However, when they are marked with a specific contour, whose details are given in the next section, inverse scope reading disappears and (4) becomes unambiguous.

(4) Alle Politiker sind nicht korrupt. (all > not)
All politicians is not corrupt (not >all)
(a) All politicians are such that they are corrupt.
(b) It is not the case that all politicians are corrupt.

Krifka, on the other hand, looks at constructions with subject and object quantifiers (5). He assumes (5) to be unambiguous with the neutral prosody. When (5) is marked with a marked contour, inverse scope becomes available.

(5) Jeder Student hat mindenstens einen Roman gelesen. (every > one)
Every-NOM student has at least one-ACC novel read., *(one > every)
`Every student has read at least one novel'.

The prosody acts differently in these studies. It functions as a filter in Büring and blocks inverse scope, which is otherwise available. For Krifka, it enables the inverse scope, which is otherwise unavailable. In this respect, the division between two studies resembles the discussion in the Russian section above. Though different analyses for German is not a complete disagreement unlike Russian since they investigate different structures.

3.2.1. Büring (1997)

German is taken to be a scope-rigid language, scope interpretations are determined by the surface order of quantificational elements. One exception to this requirement noted in the literature (Büring, 1997; Krifka, 1998; Bobaljik and Wurmbrand, 2012), is the availability of inverse scope under a marked contour where the first quantificational phrase is marked with a rising accent, and the second one is marked with a falling accent. This marked contour is known as rise-fall contour, and it has been claimed that this contour causes different scopal interpretations compared to a sentence with neutral prosody. Büring (1997), takes up this scope inversion under rise-fall contour with two operators: Universal quantifier - negation (6) and necessity modal-negation (7).

(6) Alle Politiker sind nicht korrupt.

All politicians is not corrupt

(a) All politicians are such that they are corrupt.

(b) It is not the case that all politicians are corrupt.

(7) Du must nicht soviel rauchen.

You must not so much smoke

(a) You must not smoke that much.

(b) You do not need to smoke that much.

When sentences (6) and (7) are produced with a rise-fall contour, one of the readings disappear. In (8), (a) reading disappears and in (9), (b) reading disappears. (/) refers to rising tone and (\) to falling tone in the following examples. Also, rising tone marks topic and falling tone indicates focus constructions. In (8), the subject is the topic and the object is the focus. Capitalization marks stress:

(8) /ALLE Politiker sind NICHT\ korrupt. (all > not)

All politicians is not corrupt *(not > all)

'All politicians are such that they are corrupt.'

(9) Du /MUST NICHT\ soviel rauchen. (must > not)

You must not so much smoke *(not > must)

'You do not need to smoke that much.'

Büring explains this disappearance of interpretation via semantics of topic/focus constructions and pragmatic implicatures. He assumes that topic and focus constructions yield certain implicatures which may act as a pragmatic filter in certain cases. Implicatures are given in (10) below:

(10) Given a sentence *A* containing a Topic, there must be at least one disputable element in ⟦A⟧' after uttering *A.*

In the (10) above, ⟦A⟧'refers to the set of possible answers to the question Q. Disputability is explained in the following: "A set of propositions *P* is disputable with respect to a set of worlds CG (*the Common Ground*) if there is at least one element *p* in *P* such that both *p* and ¬[10]*p* could informatively and coherently be added to CG." The implicature informally requires that there must be an alternative in the CG to the sentence *A* such that the alternative is neither entailed nor excluded by the Common Ground. Let us see know how this implicature successfully explains the disambiguity in (8) and (9).

Remember that sentence (7) is ambiguous between two readings at LF. Negation takes scope over the quantifier in (a) reading and vice versa in (b). These two readings, then, can be represented as ¬∀ and ∀¬, respectively. When the sentence is marked with rise-fall contour, ∀¬ reading disappears. We will start with determining the alternatives of *all* and *no.* The alternatives are all other elements which are of the same type (Rooth, 1985). The alternatives of universal quantifier is other quantifiers such as *most, some, a* etc. The alternative of the negation is the identity function. In a Cartesian fashion, the set of alternatives for the unavailable ∀¬ are given below:

(11) ⌈all(politicians) (λx. ¬corrupt (x)), all(politicians) (λx. ¬corrupt (x))]
[most(politicians) (λx. ¬corrupt (x)), most(politicians) (λx. ¬corrupt (x))]
[some(politicians) (λx. ¬corrupt (x)), some(politicians) (λx. ¬corrupt (x))]

[10] ¬ is used for negation, and ∀ for universal quantification .

[a(politician) (λx. ¬corrupt (x)), a(politician) (λx. ¬corrupt (x))]

[no(politician) (λx. ¬corrupt (x)), no(politician) (λx. ¬corrupt (x))]

From this set, any quantifier except for the negative *no* is established by (all(politicians) (λx. ¬corrupt (x)). If all politicians are such that they are not corrupt, it is necessarily true that some politicians are not corrupt. Those quantifiers do not satisfy principle of disputability. For the negation, the problem is different. If again, (all(politicians) (λx.¬corrupt (x)) is taken to be true, then (no(politician) (λx.¬corrupt (x)) conflicts with that statement. In the end, there is no element in the set of alternatives which is neither established nor refuted by the statement. The principle of disputability cannot be satisfied and the reading is excluded. Now let us see how the surviving reading ¬∀ can be accounted for in this system.

Again, the alternatives of the quantifier and the negation are the same. The set of alternatives for the available reading ¬∀ is given below:

(12) [¬all(politicians) (λx. corrupt (x)), all(politicians) (λx. corrupt (x))]

[¬most(politicians) (λx. corrupt (x)), most(politicians) (λx. corrupt (x))]

[¬some(politicians) (λx. corrupt (x)), some(politicians) (λx. corrupt (x))]

[¬a(politician) (λx. corrupt (x)), a(politician) (λx. corrupt (x))]

[¬no(politician) (λx. corrupt (x)), no(politician) (λx. corrupt (x))]

The first alternative violates the set of disputability. If ¬all(politicians) (λx. Corrupt (x) is taken to be true, then the alternative of it is refuted by the statement itself.

The first alternative is eliminated. All other remaining alternatives satisfy the principle of disputability. None of them is either established or refuted if ¬all(politicians) (λx. corrupt (x) is taken to be true. Since there is at least one element in the alternatives satisfying the disputability, the reading survives the implicature.

3.2.2. Krifka (1998)

Unlike Büring (1997) who has semantic-pragmatic analysis for the scope inversion under rise-fall contour, Krifka approaches to the issue from a syntactic point of view. He also takes up a different set of data to explain the rise-fall contour. According to him, sentences with multiple quantificational elements are not ambiguous (13) in German, unless they appear with the marked contour (14):

(13) Jeder Student hat mindenstens einen Roman gelesen. (every > one)
Every-NOM student has at least one-ACC novel read. *(one > every)
`Every student has read at least one novel'.

(14) /JEDer Student hat mindenstens EINen\ Roman gelesen. (every > one)
Every-NOM student has at least one-ACC novel read. *(one > every)
`Every student has read at least one novel'.

Notice the difference in the role of rise-fall contour in two accounts: In Büring's account, the contour triggers an implicature which acts a filter on LF structure, blocking a reading. In Krifka's account, the rise-fall contour allows a reading which cannot be

obtained without it. In this case, it generates an additional interpretation.

Let us see how Krifka accounts for the data in (13)-(14) with a syntactic analysis: He assumes the scope assignment principle of Frey (1993):

(15) If α, β are operators occurring in a sentence *S*, then *S* has a reading in which α has scope over β if and only if:

(a) α c-commands β, or

(b) α c-commands a trace of β

The sentence (13), involves no movement where a quantificational phrase crosses the other one (or a trace of it). The LF representation for (13) is given in (16) below:

(16) [$_{CP}$ Jeder Student$_1$ [$_{C'}$ hat [t_1 [mindestens einen Roman [gelesen]]]]]

every-NOM student has at-least one-ACC novel read

As can be seen from (16), the subject c-commands the object, hence has a scope over it. The object, on the other hand, does not c-command neither the subject nor the trace of it, hence cannot take scope over it. The only interpretation available for (16), then, is where the universal quantifier takes scope over existential one: $\forall > \exists$. If it is the case, we would intuitively expect to find a similar non-ambiguous reading for (14) because they have identical surface orders. (14) is ambiguous. Two questions need answering: (i) How is the LF structure of (14) different than (16) such that the former allows ambiguous reading unlike the latter? (ii) How does the difference in two LF

structures relate to the rise-fall contour? As an answer to the first question, the LF representation of (14) is given in (17) below:

(17) $[_{CP}$ [JEDer Student]$_3$ $[_{C'}$ hat$_1$ [[mindenstens EINen Roman]$_2$ [t_3 [t_2 [gelesen]]] t_1]]]

In this representation, the universal quantifier c-commands the existential object, so $\forall > \exists$ is obtained. The existential quantifier object c-commands the trace of the subject, making $\exists > \forall$ reading possible. The sentence, then, is interpreted as ambiguous. That leads us to the second question: Why is this complex LF representation (17) associated with rise-fall contour? Krifka claims that (17) follows from series of focus movements of quantifiers. He makes couple of assumptions on focus assignment:

(A) Focus is preferably assigned to preverbal constituents.
(B) Focus can be assigned to a constituent before movement.
(C) Contrastive topic constructions involve a focus within the topic that is marked with a rise accent.

Based on these assumptions, the derivation of (17) is the following:

(18)

a. $[_{CP}$ e $[_{C'}$ e [Jeder Student [mindenstens einen Roman [gelesen] hat]]]]

b. $[_{CP}$ e $[_{C'}$ hat$_1$ [Jeder Student [mindenstens einen Roman [gelesen] t_1]]]]

c. $[_{CP}$ e $[_{C'}$ hat_1 [mindenstens einen $Roman_2$ [Jeder Student [t_2 [gelesen] t_1]]]]

d. $[_{CP}$ e $[_{C'}$ hat_1 [mindenstens einen $Roman_2$ [Jeder Student]$_F$ [t_2 [gelesen] t_1]]]]

e. $[_{CP}$ [Jeder Student]$_{F,3}$ $[_{C'}$ hat_1 [mindenstens einen $Roman_2$ [t_3 [t_2 [gelesen] t_1]]]]

f. $[_{CP}$ [Jeder Student]$_{F,3}$ $[_{C'}$ hat_1 [[mindenstens einen Roman]$_{F,2}$ [t_3 [t_2 [gelesen] t_1]]]]

g. $[_{CP}$ [JEDer Student]$_3$ $[_{C'}$ hat_1 [[mindenstens EINen Roman]$_2$ [t_3 [t_2 [gelesen] t_1]]]]

The inverse scope becomes available in step (c) where the object scrambles over to a higher position than the subject, thus c-commanding it. After the subject moves to [Spec,CP], the object continues to take scope over it by c-commanding its trace. That is how scope interpretations in rise-fall contour are accounted for in Krifka's system.

A potential problem arises in this analysis. Notice that the prosody itself is not the main factor in scope inversion. It just marks the fact that focus-topic marked constituents underwent some kind of a movement where one quantifier ended up c-commanding the trace of the other. In principle, other kind of movements without prosody should be enough to receive inverse scope. Structures such as (18g) can be derived without prosodic markings. Let's assume that the structure is not topic-focus marked. By scrambling, we should still be able to get structures such as (19). The question is what prevents structures like (19) where scrambling enables one quantifier c-commanding the trace the other, yielding inverse scope reading.

(19) $[_{CP}$ [Jeder Student]$_3$ $[_{C'}$ hat_1 [[mindenstens einen Roman]$_2$ [t_3 [t_2 [gelesen]]]

t_1]]]

Krifka answers the question by introducing the concept of Economy (Fox, 1995). It imposes that if two derivations have the same semantic interpretation, choose the one with simpler derivation. Krifka changes this economy notion a bit by claiming that in German type of languages, comparison classes of economy must be determined based on identity of phonological form. If two sentences ended up having identical PF, choose the one with less derivations. In that sense, (19) and (16) is subjected to economy consideration since they have the same phonological form. Economy in this case favors (16) over (19), and rules out the latter. (18g), on the other hand, cannot be compared with (16) and ruled out by economy because their phonological forms are not identical. While (18g) carries prosodic markings of topic and focus, (16) lacks these markings. Even though the assumption that comparison classes of economy must be determined based on identity of phonological form in languages with free word order solves the problem for the unavailability of (19), it is not exactly clear why is must be so.

3.2.3 Interim Summary

Both studies are similar in that they are interested in scope inversion under rise-fall contour. However, there are several differences which makes it difficult to compare them. First, they make different assumptions about scope interpretations in neutral prosody. While Büring assumes such sentences are ambiguous, Krifka claims otherwise. Frey (1993) and Bobaljik and Wurmbrand (2012) claim that German is scope-rigid. Linear order corresponds to the scope relation. Along the same line, Cook et al. (2006)

suggests German scope is dependent on (i) grammatical functions, and (ii) linear order. These observations are problematic for Büring because it is not clear why universal quantifier-negation combination yield ambiguity in neutral prosody. As pointed out by Krifka (1998), the explanation is missing. Krifka's study does not face that problem since sentences with neutral prosody are assumed to be ambiguous.

Target structures are also different between two studies. Büring's data involve a more restricted set of quantificational elements: universal quantifier, necessity modal and negation. As he also acknowledges, the analysis does not accommodate other quantifiers such as partitives, indefinites etc. If these quantifiers are involved, the principle of disputability is not violated and inverse scope reading survives. Krifka's analysis can accommodate any quantifier since it does not make any reference to the nature of quantifiers. Quantifier type does not matter for the analysis to work. This generalizability seems better for the evaluation of the analysis but it also presents some disadvantages. Any subject-object multiple quantifier combination where rise-fall contour does not provide inverse scope, the analysis cannot explain the fact on its own. It needs to seek additional analyses to explain that phenomenon.

CHAPTER 4

THE QUESTIONNAIRE

This study is interested in whether Turkish allows inverse scope readings under marked prosodic conditions. It is clear that Turkish does not allow inverse scope without marked prosody. In Section 2.2, it is shown that the literature is in agreement with Turkish being a scope-rigid language. Inverse scope is not as easily acceptable as surface scope. However, I also show that when the object is ACC-marked indefinite, inverse scope is easily accessible. The reason for this is that either these indefinites are interpreted as specifics (Enç, 1991) or they introduce choice-function variables, which enable them to take higher scope than other quantifiers in the sentence (Kelepir, 2001). Since ACC-marked indefinites can already take inverse scope regardless of the prosodic condition, they are not included in the present experiment.

Another point that needs mentioning is what kind of prosody counts as “marked”. A comparison of subsections 3.1 Russian and 3.2 German shows that different languages have different prosodic patterns, which allow inverse scope. While German uses a rise-fall contour, Russian employs a downstepped pitch accent without any prosodic prominence on the object. This experiment uses an intermediate prosodic break and prosodic prominence on the object quantifier as the marked contour. These prosodic properties are selected based on preliminary investigations from native speakers. The

prediction for the experiment is that inverse scope, which is not allowed under neutral prosody in most circumstances, will be available under the marked prosodic contour. Like German and Russian, Turkish is also a free-word order language with scope rigidity. The prediction given above is a result of the similarity among these languages and preliminary judgements from native speakers.

4.1 Design

To test this prediction, Turkish native speaker's acceptability judgments were obtained in a sentence context matching task (SCMT). Participants were asked to judge a spoken sentence on a four point scale based on how suitable it is according to the context they read.

4.1.1 Participants

Participants are 40 Turkish monolingual native speakers with no background in linguistics. Bilingual speakers are not included in the study because their other language(s) may interfere with their judgments. Participant's ages are 18 and older. They have spent most of their lives in Turkey. They were contacted by the experimenter via e-mail and social media to participate in the study. Participants were required to have normal or corrected to normal vision, and no hearing impairment to participate in the experiment.

4.1.2 Stimuli

The stimuli for this experiment consists of mono-clausal transitive sentences with one quantifier in the subject position, and another in the object position The quantifier

types are universals, existentials, and bare numerals (BN). Some of these quantifiers appeared with both an overt Case marking and oblique Case markers, while others appeared only in their oblique form. The stimuli includes 111 items which split as 88 target sentences, 20 control, and 3 training items. 11 different quantifier pairs were tested in two conditions based on their prosodic condition (neutral contour vs. marked contour). 108 items (target + control sentences) were split into two, and each subject answered half of the whole stimuli. The split is preferred since 111 items might create judgement fatigue for participants, and it might affect their judgements. The absence of a prominence and a break provides neutral prosodic contour and the presence of a prosodic prominence on the object quantifier provides marked contour. Each sentence is preceded by an inverse scope inducing context[11]. The context is provided in order to drive participants into thinking about alternative readings of a target sentence. It is also introduced as a part of assessing the availability of scope readings rather than the easiness of accessibility. Each quantifier pair is varied by 4 different stories (11 Quantifier pairs x 4 contexts x 2 prosodic conditions) which sum up to 88 target sentences. Quantifier pairs were selected among inherently unambiguous quantifiers, in order to eliminate additional interpretations that could be caused by inherently complicated quantifiers. The selection is justified in section 6.3. 20 control items were chosen among scope freezing constructions[12]. Half of them are bi-clausal structures and the other half is inverse linking constructions[13]. A sample item from the experiment is given below in (1):

[11] In a Sentence-Context Matching Task, inverse-inducing context refers to those that can only be acceptable with respect to the inverse scope interpretation of the sentence.

[12] Scope freezing constructions refer to constructions where inverse scope is not available.

[13] Inverse Linking is the phenomenon where one quantifier is contained inside another quantifier.

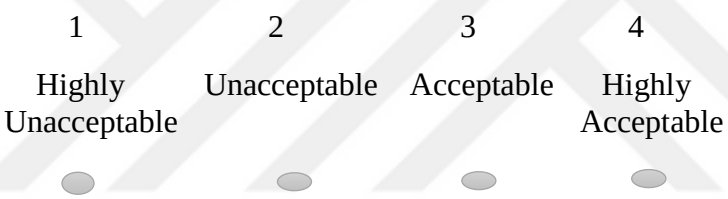
(1) Five friends, who were not very hungry at the moment, went to a restaurant together. They thought that one extra-large size pizza would be enough for all of them. They made their order accordingly.

The sentence (Presented auditorily without the gloss or translation):

Beş kişi bir yemek sipariş et-ti.

Five person a meal order-PAST

'Five people ordered a meal'



4.1.3 Procedure

Qualtrics software was chosen to elicit data because it allows for implementation of auditorily produced sentences and it provides long-distance access to the experiment. Any suitable subject was able to complete the survey by using a computer with internet connection. Before the actual experiment phase, participants were asked to give their consent online, and they were informed of what they are supposed to do in the experiment. To get familiar with the task, they answered three practice items, which is not included in data analysis. After the practice, they moved onto the actual experiment.

For the experiment, participants rated orally produced target sentences on a four-point scale according to the context they read from the screen. After they read the

context, they clicked on the sound button below to hear the sentence, and then they were asked to rate the sentence based on to what degree it is compatible with the context provided before. They selected a value from a four point Likert scale on the computer screen where four represents the sentence as highly acceptable and point one represents highly unacceptable. The participant selected the option without any time pressure. The absence of time pressure is preferred because (i) scope interpretations are not easy to get, often require serious amount of time and (ii) the study is interested in investigating availability of inverse scope rather than how available it is or what the processing of the inverse scope is like. The experiment was planned to take between 30-40 minutes based on participant performance. Participants were thanked for their participation at the end of the questionnaire.

CHAPTER 5

RESULTS

Figure 5.1 below shows the mean ratings for the availability of inverse scope under neutral and marked prosodic contour. The mean value for neutral contour is 1.9392 (mean range 1-4) and for the marked contour, it is 1.8795 (mean range 1-4). These mean values are obtained by averaging all quantifier pairs and also averaging the two parts of the questionnaire.

These values indicate that marked prosodic contour did not help to improve the availability of inverse scope for Turkish native language speakers. The result shown

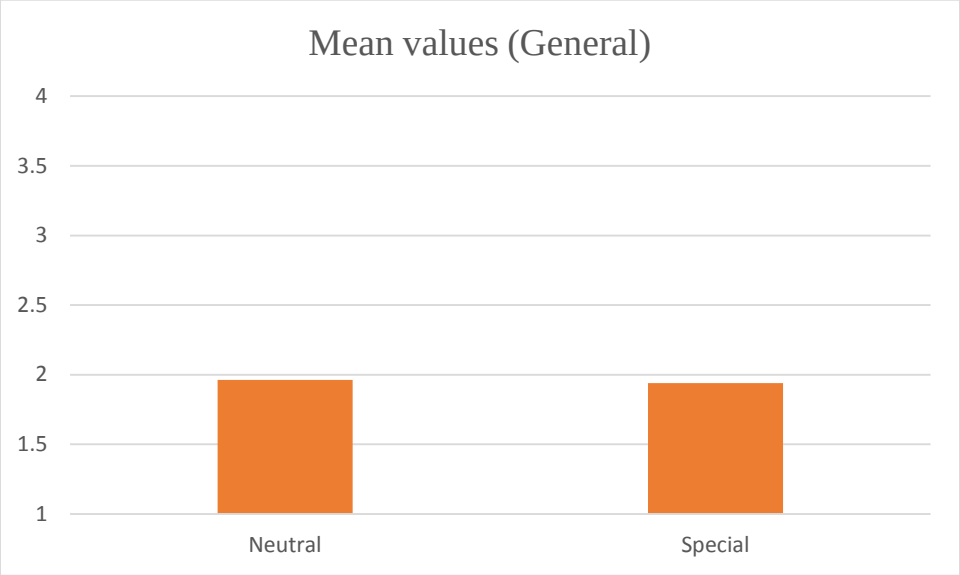


Figure 5.1. Mean values for the availability of inverse scope (general)

above runs counter to the initial prediction that the availability of inverse scope should improve with a marked prosodic contour that is different than the neutral.

The different group of participants performing on the first half of the questionnaire and on the second half of the questionnaire did not show a significant difference in terms of their performance on mean values in general. While the mean value for the first group is 1.916 for neutral contour, and 1.848 for the marked contour, for the second group, it is 1.962 for the neutral and 1.941 for the marked contours (See Appendix for the figures).

The result that shows scope judgements generally should not be taken as an absolute verdict on the research question since the grammaticality judgment questionnaire was tested in eleven different quantifier pairs. It may be the case that prosody affects the availability of inverse scope interpretations in some specific quantifier pairs, but this effect is not reflected in figure 5.1. To see whether it is the case, mean values for each quantifier pair is analyzed, and it is seen that prosody does not contribute to receiving inverse scope in any of these quantifier pairs. Figure 5.2 below is given to illustrate the phenomenon for existential subject and numeral object. The mean value for neutral contour is 1.357, and for the marked contour it is 1.243. The mean values for other pairs are given in the Appendix.

Since the mean values did not show an increase in the marked prosodic contour both in the general schema and in quantifier pairs individually, it is safe to conclude that the marked prosodic contour does not contribute to the availability of inverse scope in Turkish. Another interesting finding is the scope judgement differences between different quantifier pairs. Based on the judgements, inverse scope is readily available in some

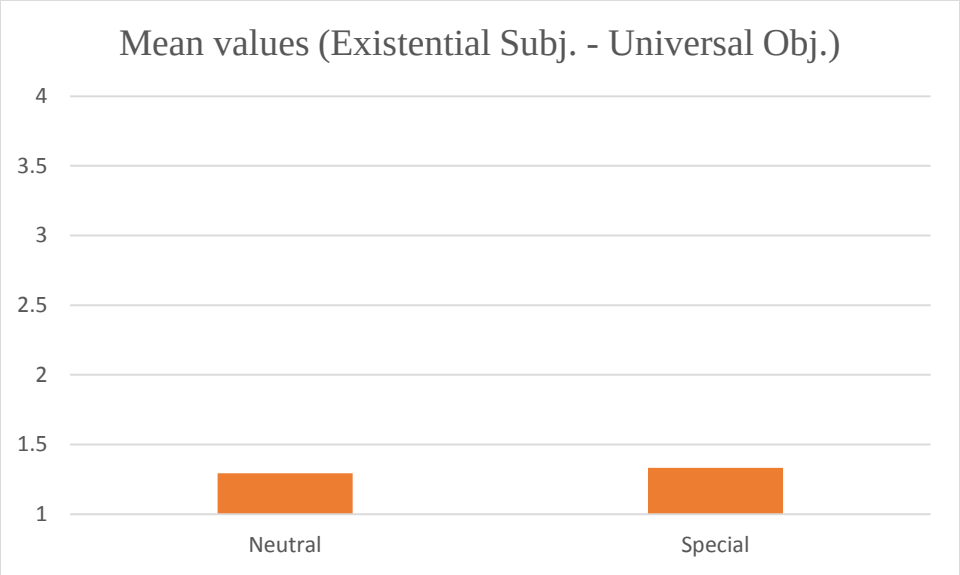


Figure 5.2. Mean values for the availability of inverse scope

(Existential Subj. – Distributive Universal Obj.)

quantifier pairs. Figure 5.3 illustrates the mean ratings of numeral subject and existential object with oblique case. The mean value for this pair is 3.134 in the neutral contour, and 3.254 in the marked contour. However, the inverse scope interpretation is not available in some other quantifier pairs. One of the lowest mean values for the availability of inverse scope comes from existential subject and universal collective object. The mean values for this pair 1.288 on the neutral contour, and 1.243 on the marked contour. It is illustrated in figure 5.4 below.

Results point out to two different findings: The marked prosodic contour does not affect the availability of inverse scope in Turkish, and inverse scope is readily available in some quantifier pairs, while it cannot be obtained in the others. The next chapter presents discussion on these two findings.

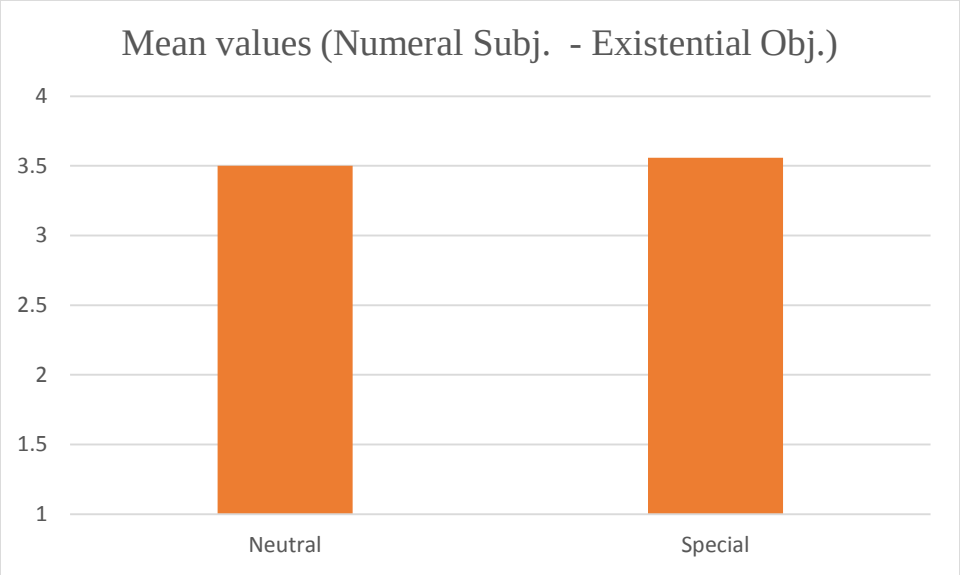


Figure 5.3. Mean values for the availability of inverse scope

(Numeral Subj.-Existential Obj.)

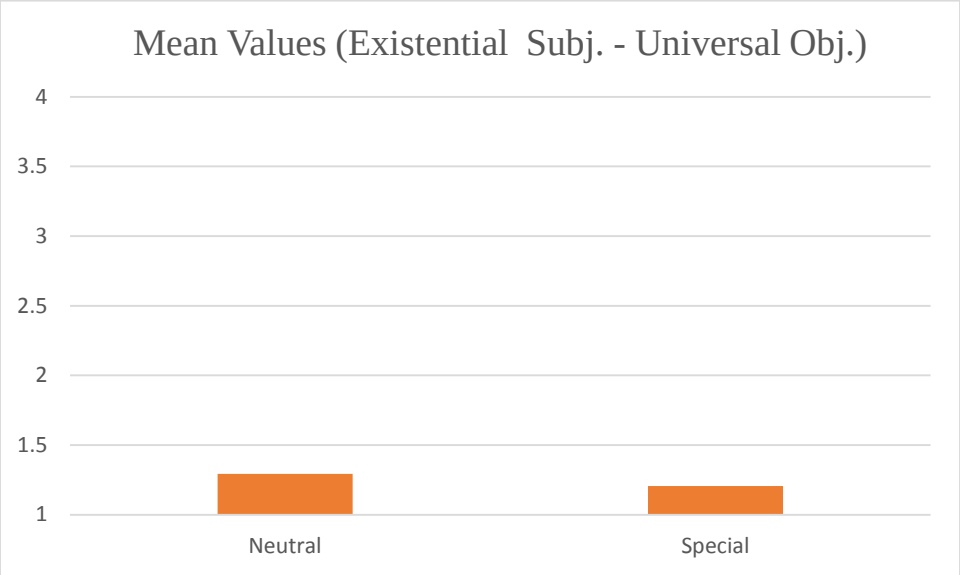


Figure 5.4. Mean values for the availability of inverse scope

(Existential Subj.-Universal Obj.)

CHAPTER 6

DISCUSSION

The research question of the thesis is whether the inverse scope, which is assumed to be unavailable in Turkish transitive sentences with subject and object quantifiers, is available with the presence of a marked prosodic contour. The answer to this question turned out to be that prosody itself does not enable inverse scope readings. This marked contour was possibly seen as an extra emphasis on the object by participants, and it was not able to change scope relations. Participants did not give higher judgements in general (Figure 5.1), or in most of the quantifier pairs (Figure 5.4). If participants are analyzed separately, we again cannot see any participants performing higher in the marked contour condition with respect to the neutral condition. There was not any data point where a subject judged a sentence as unavailable (by assigning a value of 1 or 2) in the neutral contour, and judged the same sentence as available (by assigning a value of 3 or 4) in the marked contour. All these suggest that prosody itself does not contribute receiving inverse scope in Turkish, but it is an open question whether it contributes to enable inverse scope when combined with other factors.

Most of the Russian experimental studies mentioned above (Luchkina & Ionin, 2015; Stoops and Ionin, 2012; and Ionin and Luchkina, 2014) conclude that prosody is a contributing factor in the availability of inverse scope, but it is not the only factor. Only if

it is combined with scrambling (by moving the object to a sentence-initial position), does prosody facilitate inverse scope to be available. It may well be the case that Turkish is similar Russian in that prosody, when combined with other operations, contributes to receive inverse scope. Since the present study did not manipulate word order, it is hard to give a final decision but future studies may reveal whether this is the case.

Another interesting finding is the availability of inverse scope in some quantifier pairs. When the object is an existential or numeral marked with an oblique case, inverse scope becomes available regardless of the prosodic condition (See Appendix for graphs). This is unexpected considering that the literature assumes that surface order reflects scope relations in Turkish. Note that Turkish already has an exceptional case where inverse scope is readily available. In Chapter 2.2, I noted that ACC-marked indefinites in the object position have exceptional wide scope. Enç (1991) claims ACC-marked indefinites are specifics, so they must take scope over at least one operator. Kelepir (2001) objects to her by arguing that these indefinites introduce choice-function variables, which are bound by an operator higher than the existential closure. Both of these accounts predict that indefinite objects without accusative case is incapable of taking wide scope, yet it turns out that they can. One possible explanation for this behavior of indefinites without overt Case marking is to claim that these indefinites are marked with a covert Case marking (Bejar and Massam, 1999). The idea is that indefinites without Case marking are actually marked with a nominative case, hence they bear an oblique Case[14]. The nominative case in Turkish is phonetically null, so any object marked with an oblique nominative case is also expected to be phonetically null. Since

[14] Oblique case refers to non-basic, unexpected cases.

Case in Turkish can be interpreted as specifics and they can take inverse scope, then an indefinite marked with an oblique nominative case can also take inverse scope. If they are indeed marked with a covert oblique case, they are expected to behave similar to an indefinite overtly marked with accusative case. We can actually test it in different environments. For example, while acc-marked indefinite can be combined with the wh-phrase *which* (1), oblique marked indefinite cannot be (2):

(1) Reyya hangi kitabı okudu?
Reyya which book-ACC read-PAST?
'Which book did Reyya read?'

(2) * Reyya hangi kitap okudu?
Reyya which book read-PAST?
'Which book did Reyya read?'

Which requires a contextually given set of arguments, *a specific*. While ACC-marked indefinite satisfies this requirement (1), oblique marked indefinite cannot satisfy it (2). It suggests that oblique marked indefinite cannot be interpreted as a *specific*, so it cannot be an indefinite bearing covert Case marking.

If it not the case that oblique-marking is a covert Case, then Turkish must allow inverse scope with existential object regardless of the specificity or case marking of the noun. Then it is not only Case that plays a role in receiving inverse scope. Other factors, like quantifier type, can contribute to the availability of inverse scope. This behavior of

indefinites can be explained by Beghelli and Stowell's (1997) feature-checking approach to scope taking. They group quantifiers into different categories and argue that all QP categories have designated positions. Each quantifier category has a special feature assigned to them and they raise to specifiers of these positions to check their features. The categories are given below in (3) and the positions are shown in Figure 6.1:

(3) **Interrogative QPs (WhQPs):** Wh-phrases such as *who, what, whom* occupy this position. They bear [+Wh] feature.

Negative QPs (NQPs): QPs such as *nobody, nothing* occupy this position. They bear [+Neg] feature.

Distributive-Universal QPs (DistQPs): QPS such as *every, each* occupy this position. They bear [+Dist] feature.

Counting QPs (CQPs): Decreasing QPs such as *few, fewer than*, and modified numerals such as *more than two, between four and five* occupy this position. They count individuals and have a very local scope.

Group-Denoting QPs (GQPs): Indefinite QPs such as *a, some, several,* bare numerals such as *two authors,* and definites such as *the student* occupy this position. They can be interpreted referentially independent, or dependent and their interpretation determines their position in the structure.

When GQPs like existentials and bare numerals are in the subject position, they are interpreted as referentially independent and they occupy [Spec,RefP] to "fulfill the function of (logical) subject of predication". In the object position, they can either occupy

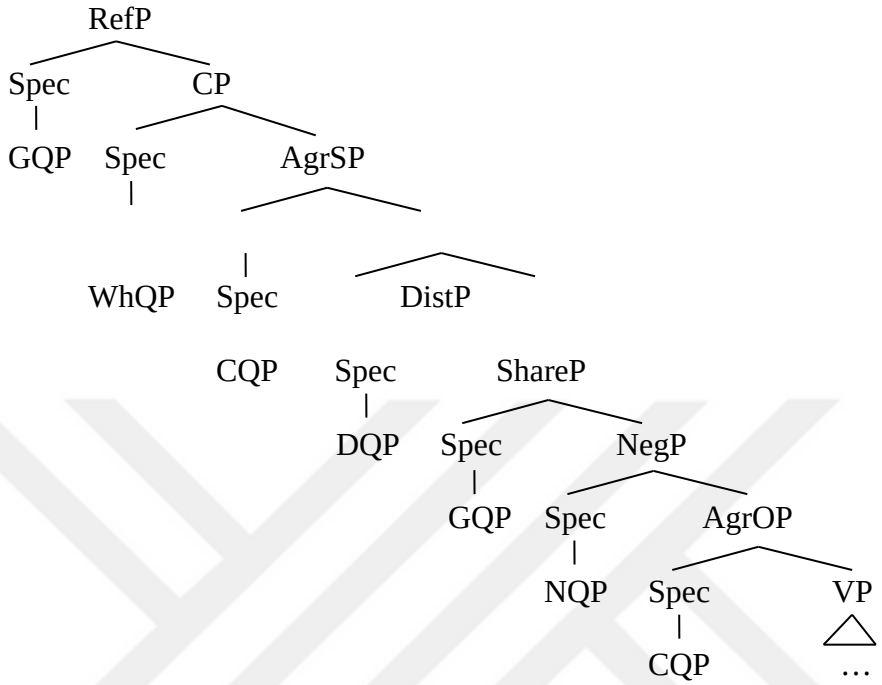


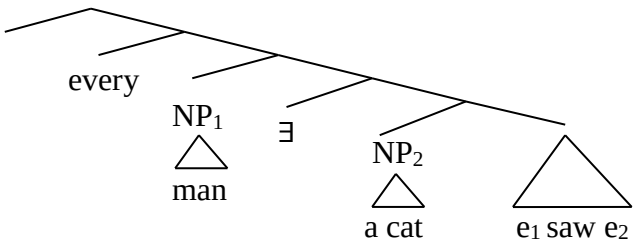
Figure 6.1. Positional distribution of quantifier categories

[Spec,ShareP] or [Spec, RefP] depending on their referential independency status. Turkish findings reported above can follow from this behavior of GQPs. I have stated above that existentials and bare numerals in the object position can take inverse scope. However, when they are the subject, no objects can take scope over them and the sentence cannot have inverse scope. This coincides with what Beghelli and Stowell predicts for these quantifier pairs.

The relationship between this feature checking system and specificity must be considered. If the GQP in the [Spec,RefP] position introduces specificity, the wide-scope reading observed in that position may be caused by the referential reading of the object GQP. In that case, wide-scope reading of a GQP cannot be associated with scope. Although they are not concerned with referential reading in their analysis, Beghelli and

Stowell acknowledges that the referential reading of a GQP is possible. The question is, then, how we can decide whether wide scope reading arises from a quantifier scope, or from referentiality. To answer this, we can refer back to the *which* test introduced above. *Which* requires a specific, and indefinites without case marking cannot be a complement of *which*, suggesting that they are not specifics. Since referential reading depends on specificity, wide-scope reading of indefinites without morphological case marking cannot be an instance of referentiality. We can conclude that the wide scope reading of a GQP is independent of specificity and it arises due to quantifier scope.

Another plausible explanation for the availability of inverse scope with existential and bare numeral objects is to modify Kelepir's (2001) explanation for ACC-marked indefinites. Kelepir assumes Heim (1982)'s claim that indefinites are variables over choice functions, and they must be bound by another operator higher in the clause. The operator that binds ACC-marked indefinite is existential quantifier, which acts as the choice-function operator. This existential quantifier is adjoined to the structure at two levels: (i) to the nuclear scope of higher quantifier (ii) to the sentence level position. The two positions can be seen in Figure 6.2 for the sentence *every man saw a cat*:



(taken from Heim (1982), p. 136)

Figure 6.2. The structure for *every man saw a cat*.

Diesing (1992) developed the Mapping Hypothesis which argues that the noun phrases in the VP-internal domain are mapped into the nuclear scope of the quantifier (lower position), and noun phrases in the VP-external domain are mapped into the clause level quantifier (higher position). When the phrase is mapped into the lower position, it cannot take scope over another quantifier, because it remains within the nuclear scope of that quantifier; when it is mapped into the higher position, it can take scope over the other quantifier, yielding inverse scope. Kelepir argues that ACC-marked indefinites move to VP-external domain to check their Case features, so they are mapped into the higher domain. That's how they are able to take inverse scope. Indefinites without overt Case marking stays inside the VP domain, so they are mapped into the lower position and they cannot take scope over the subject quantifier in that position.

I argue that indefinites without overt Case marking are able to take inverse scope. It suggests they also move out of the VP domain to check a feature.

Turkish has been claimed to be a scope rigid language (Zidani-Eroglu, 1997; Kelepir, 2001) similar to some other languages like German (Krifka, 1992), Chinese (Huang, 1982). Based on the data shown in this study, it may be the case scope rigidity is not inherent for languages. This challenge against inherent scope rigidity of languages is not new. Bobaljik and Wurmbrand (2012) argues that scope rigidity is not an arbitrary parameter for languages, rather it depends on the existence of other structural properties that languages have. For example, they associate scope rigidity with scrambling for languages like German and Japanese. Antonyuk (2015) takes this claim a bit further and argues that scope-rigidity should not be parametrized upon languages, rather it should be specified based on particular constructions. She shows that Russian, which had been

claimed as a scope-rigid language, allows inverse scope readings on several constructions. This study supports these two challenges by presenting that inverse scope is readily available in certain quantifier configurations in Turkish, which has been assumed as a scope-rigid language.

This, in turn, suggests that experimental evidence should precede any theoretical analyses on quantifiers. The difference in the background assumptions between Krifka and Büring may be the result of the lack of such evidence. As I noted in section 3.2.3, Büring assumes that sentences with multiple quantifiers are ambiguous, while Krifka assumes that they are not. To the best of my knowledge, there is no scope judgement data for such sentences in German. Data such as the one I reported above, would surely help them to base their analyses on stronger grounds, and it would also help to evaluate different analyses they provide.

CHAPTER 7

CONCLUSION

This thesis investigates the availability of inverse scope in different prosodic conditions in Turkish. To perform this investigation, a grammaticality judgement questionnaire were filled out by Turkish native speakers. It has been found that there is no significant difference in participants' inverse scope judgments between the neutral prosodic contour and the marked contour, which has been specified as a focus on the object determiner and slight prosodic break between subject and object. This has taken to suggest that prosody itself does not contribute to change scope interpretations. It also has been found that inverse scope is readily available in certain quantifier pairs in neutral prosody, which is surprising considering that Turkish is known as a scope-rigid language. This finding supports other studies that challenge the scope-rigidity parameter. If scope-rigidity is not parametrized on languages, but on constructions, scope behaviors in different languages should be based on experimental base. Native intuitions of authors may be misleading in studies including quantifier scope.

Future studies may test whether prosody contributes to scope interpretations by manipulating word order, or information structure as well as prosody. This has already been tested for Russian by Luchkina & Ionin (2015), Stoops & Ionin (2012), and Ionin & Luchkina (2014) and it has been found that prosody helps to obtain inverse scope only if word order is also manipulated. Future studies may test the neutral SOV, and scrambled

OVS, or OSV orders along with neutral and marked prosodic conditions to see whether the same finding can be observed in Turkish as well.

It has been suggested that inverse scope is readily available in neutral prosody in some quantifier constructions, which argues against the idea that Turkish is scope-rigid. The finding supports other studies which challenge scope-rigidity parameter. Based on this idea, I argue that it is risky to make assumptions/generalizations when it comes to scope behaviors in a specific language and it is recommended to run judgement surveys/ experiments before any theoretical analyses.

APPENDIX A

RESULTS FOR QUANTIFIER TYPES

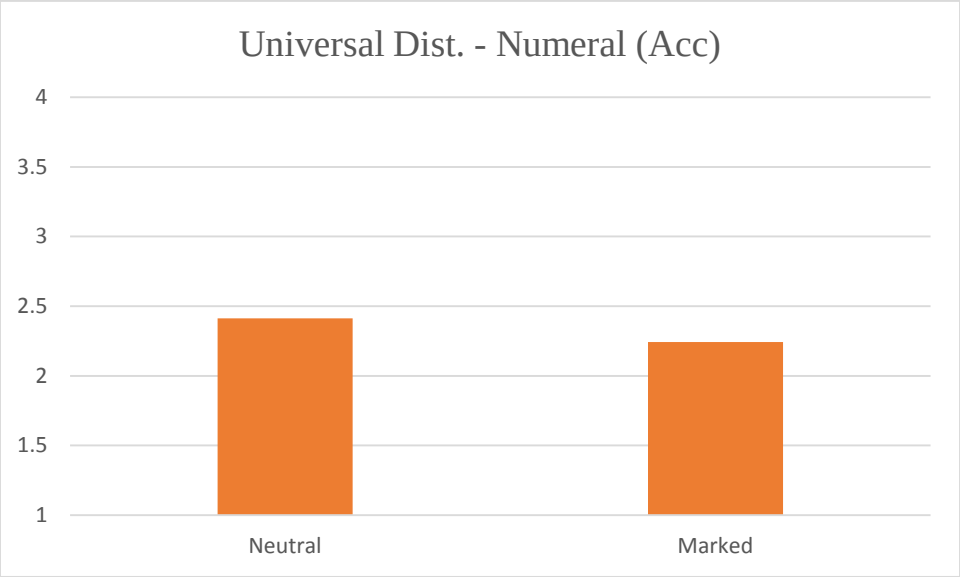


Figure A.1. Mean values for the availability of inverse scope (Universal Distributive Subj.-Numeral Obj. with a morphological case.)

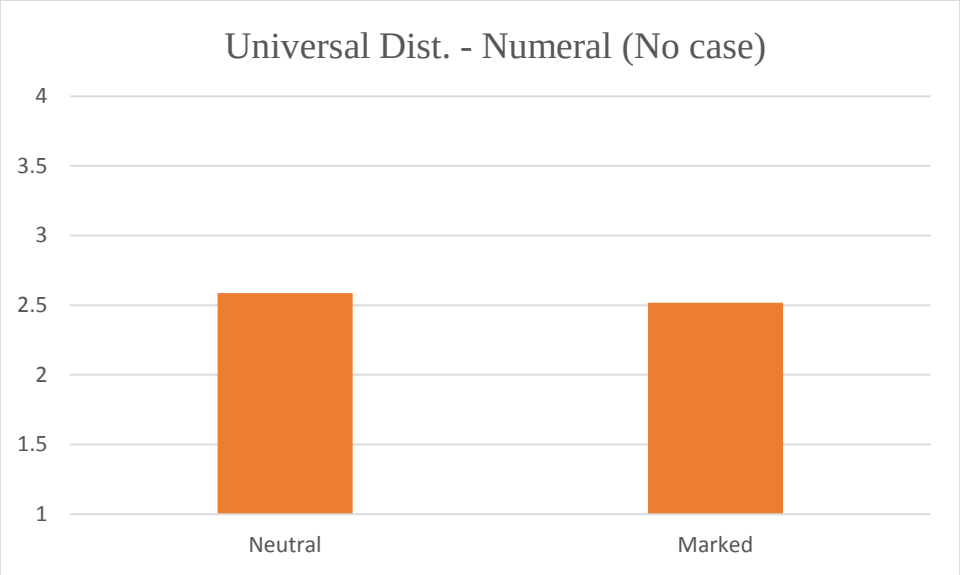


Figure A.2. Mean values for the availability of inverse scope (Universal Distributive Subj.-Numeral Obj. without case.)

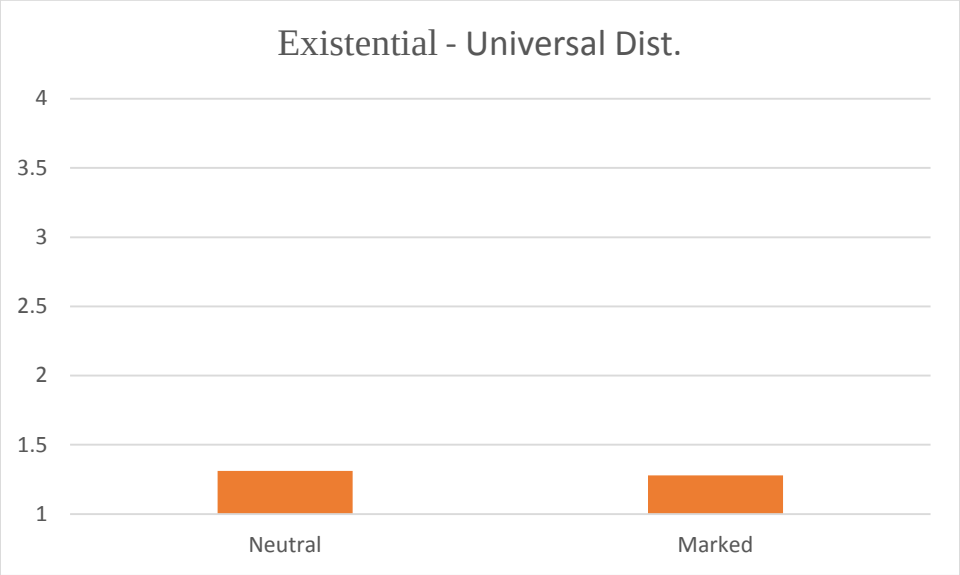


Figure A.3. Mean values for the availability of inverse scope (Existential Subj.- Universal Distributive Obj.)

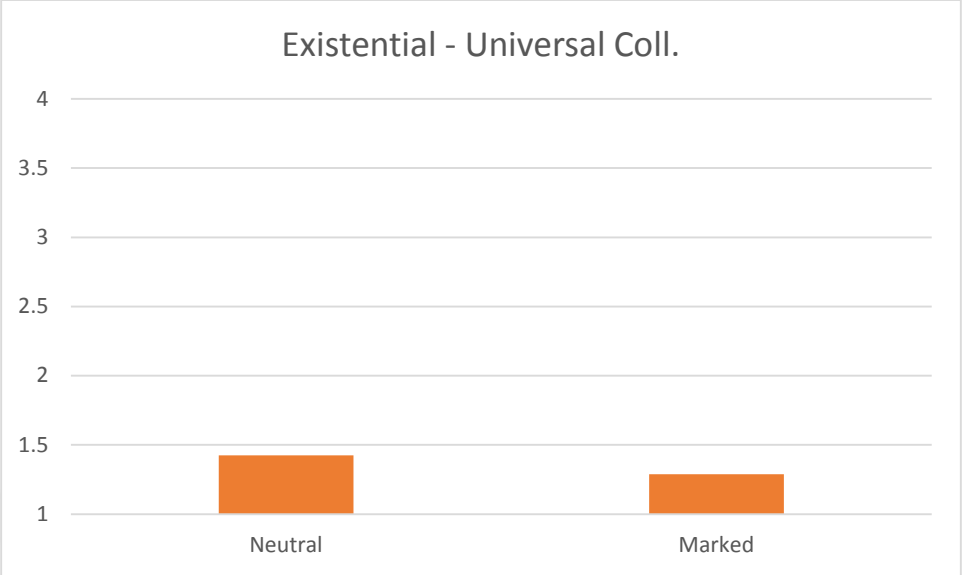


Figure A.4. Mean values for the availability of inverse scope (Existential Subj.- Universal Collective Obj.)

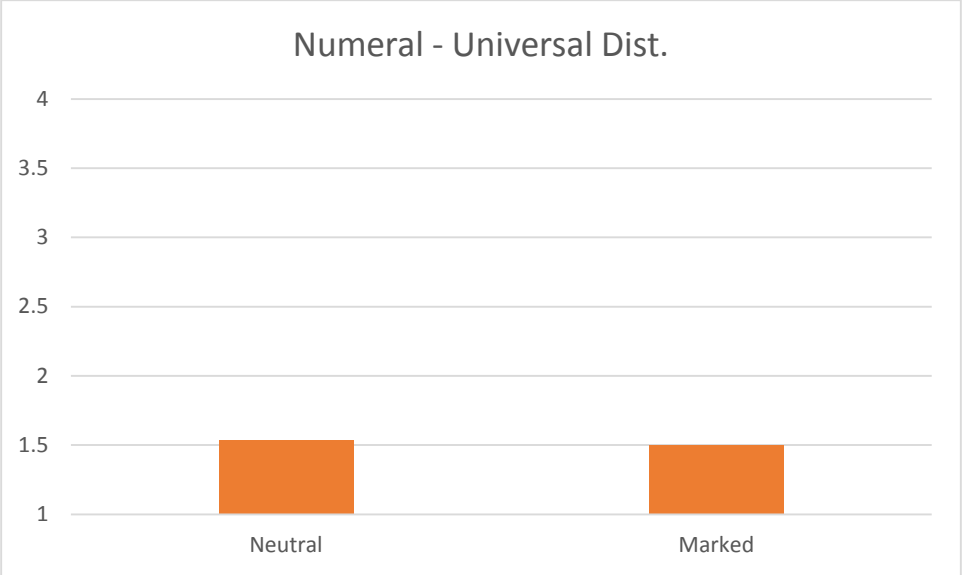


Figure A.5. Mean values for the availability of inverse scope (Numeral Subj.- Universal Distributive Obj.)

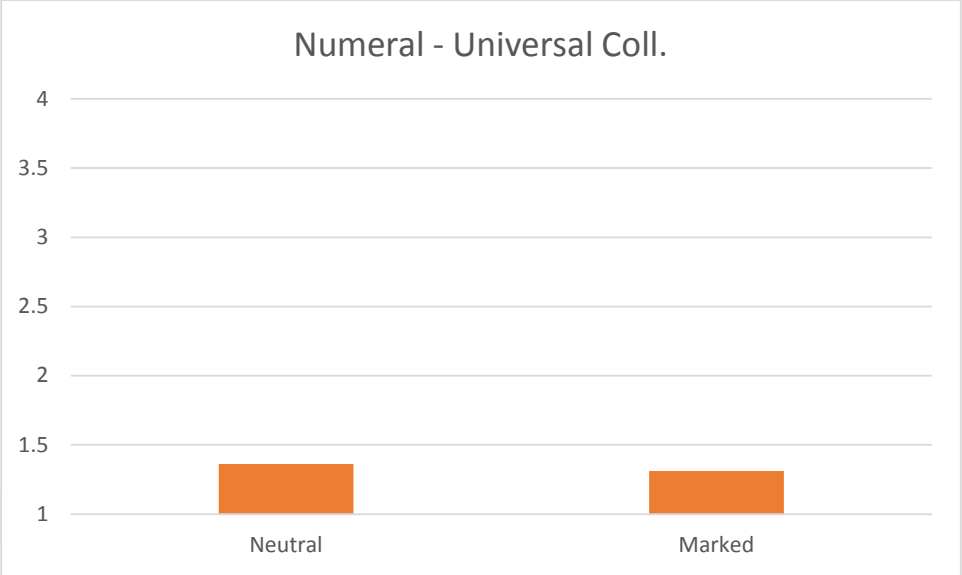


Figure A.6. Mean values for the availability of inverse scope (Numeral Subj.- Universal Collective Obj.)

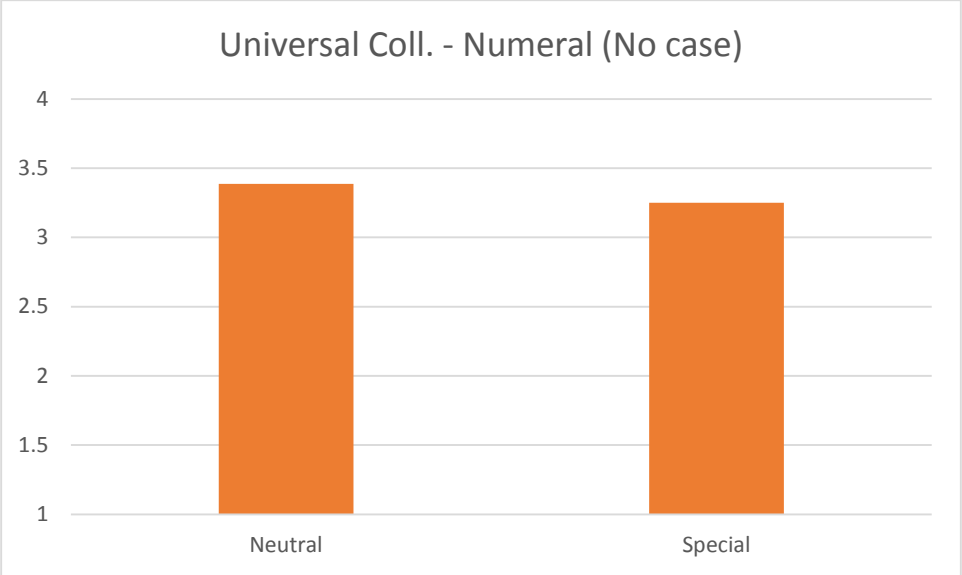


Figure A.7. Mean values for the availability of inverse scope (Universal Collective Subj.- Numeral Obj. without Case marking)

APPENDIX B

STIMULI USED IN THE STUDY

Universal Subject – Numeral Object (Case)

1) Yeni köşk alan evli çiftin salon ve yatak odaları o kadar büyüktü ki marketten aldıkları bütün lambaları bu iki odanın aydınlatması için kullandılar.

   (A recently married couple's bedroom and living room were so big that they used all the lamps, which they bought from the market, to enlighten these two rooms)

   Her lamba iki odayı aydınlattı.
   (Every lamp enlightened two rooms-ACC.)

2) Değişik ülkelerden kültürlerini tanıtmak için gelen çok sayıda topluluk için kültür bakanlığı on tane otel ayarlamıştı. Bu on oteli gelen misafirler biraz zor olsa da paylaşmak zorunda kaldılar.

   (Minister of Culture had arranged ten hotels for many communities who came from different nations all over the world to present their culture. These visitors had to share these ten hotels, even though it was difficult.)

   Her topluluk on binaya doluştu.
   (Every community crowded ten building-DAT)

3) Bir tıp fakültesinde öğrencilerin çalışması için iki ofis ayrıldı. Öğrenciler soyadlarına göre ikiye bölünerek odalara yerleştirildiler. A-L arası öğrenciler birinci odada, M-Z arası öğrenciler ise ikinci odada çalıştılar.

   (Two offices were reserved for medicine students to study in. Students were placed to the two rooms by being splitted alphabetically. Students with a surname between A-L studied in the first room, the ones between M-Z studied in the second room)

Her tıp öğrencisi iki odada ders çalıştı.
(Every medicine student studied two rooms-LOC)

4) Yaz tatilinde okumaları için bir öğretmen öğrencilerin Don Kişot, Sefiller, Faust ve Beyaz Geceler romanlarından oluşan bir okuma listesi verdi. Tatil boyunca bütün öğrenciler listedeki kitapları eksiksiz olarak okudular.

   (A teacher gave a reading list consisting of Don Quixote, Les Miserables, Faust and White Nights to students to read them during the summer vacation. All students were able to finish the list without exception)

   Her öğrenci dört kitabı okudu.
   (Every student read four books-ACC)

Universal Subject – Numeral Object (No Case)

5) İç Anadolu bölgesinde ender bulunan saka kuş türünden sadece üç tanesi hayatta kaldı. Bölgeye gelen bütün gözlemciler bu üç kuşu gözlemlemeden ayrılmak istemiyorlar.

   (In the Anatolian region, only three of the rarest goldfinches remained alive. Any bird observer who came to the area did not want to leave without observing these birds)

   Her gözlemci üç kuş gözlemliyor.
   (Every observer is observing three birds-OBL)

6) Bir anaokulu sınıfında öğretmen bir proje için dört özel kağıt hazırladı ve her öğrencisinden sırayla bu kağıtlara resim çizmesini istedi. Ortaya çıkan dört eser okul panosuna asıldı.

   (A teacher prepared four special papers for a project in a pre-K class and she asked every student of her to draw pictures on these papers. Four drawings, in the end, were hanged on the display board.)

   Her anaokulu öğrencisi dört resim çizdi.
   (Every pre-K student drew four pictures-OBL)

7) Not Defteri filmlerinin ilk iki filmi vizyona girdiğinde şehirdeki çiftlerin istisnasız hepsi bu filmleri görmeye gittiler.

   (When the first two movies of the Notebook were screened, every couple in the city went to see these movie.)

Her çift iki romantik film seyretti.
(Every couple watched two romantic movies-OBL)

8) Bir parkta sarhoş gezen iki adam etrafta bulunan kadınları rahatsız etmeye başladı. Kadınlar bir süre sonra durumdan cok rahatsız olup toplandılar ve bu iki sarhoş adamı tartakladılar.
(Two drunk men started to harass several women in the park. Being too disturbed by the situation, all women in the park gathered and beat these two drunk men.)

Her kadın iki adam dövdü.
(Every women beat two men.)

Existential Subject – Universal Distributive Object

9) Bir sınıfta bulunan 15 öğrenci birbirlerini çok sevmedikleri için hiçbiri aynı üniversiteye denk gelmeyecek şekilde başvurularını yaptılar. Sonuç olarak hiçbir üniversiteye bir öğrenciden fazla başvuran olmadı.

(Each one of the fifteen students from the same class applied to different universities because they did not like each other and tried to avoid each other . In the end, no university was applied by more than one student.)

Bir öğrenci her üniversiteye başvurdu.
(A student applied every university-DAT)

10) Öğretmenler aralarında toplanıp her bir öğretmen kendi dersinden bir öğrenciyi bırakmaya karar verdi. Matematik öğretmeni Ahmet'i, Fizik öğretmeni Mehmet'i, Turkce öğretmeni Yusuf'u gibi her öğretmen farklı bir öğrenciyi bırakma kararı aldı. Bu kararlarını sene sonunda uyguladılar.

(After a meeting, teachers decided to fail one student from their courses. Every teacher decided to fail a different student like math teacher decided to fail Ahmet, Physics teacher decided to fail Mehmet, Turkish teacher decided to fail Yusuf etc. They carried out their decision at the end of the year.)

Bir öğrenci her dersten kaldı.
(A student failed every course-ABL)

11) Bir imza gününe katılan yazarlar birbirlerine saygısızlık etmemek için herkesin sadece kendi kitabını imzalamasına karar verdiler. Gün sonunda herkes sadece kendi kitabını imzalamıştı.

(Authors, who were attending to an autograph session, decided to sign only their own books in order not to disrespect the other authors. At the end of the day, everyone signed only their own book.)

Bir yazar her kitaba imza attı.
(An author signed every book-DAT)

12) Bir istihbarat teşkilatı ülkeye giren bütün yabancı bürokratların takip edilmesini kararlaştırdı. Bu doğrultuda her bir bürokrat için bir ajanı görevlendirdi. Ülkede bulundukları süre boyunca bu bürokratlar ajanlar tarafından takip edildi.

(An intelligence agency decided to follow all the bureaucrats entering into the country. For this purpose, they assigned one agent for each bureaucrat. As long as they were in the country, these bureaucrats were followed by agents.)

Bir ajan her bürokratı takip etti.
(An agent followed every bureaucrats-ACC)

Existential Subject – Universal Collective Object

13) National Geographic vahşi yaşamla ilgili on yeni belgesel hazırladı. Her bir belgeselin yayın hakkını ise farklı kanallara verdi ki sadece bir kanal aynı anda bir belgesel yayınlayabilsin.

(National Geographic prepared ten new documentaries about wild life. They distributed each documentaries' broadcasting rights to a different channel so that only one channel can broadcast one documentary.)

Bir kanal bütün belgeselleri yayınladı.
(A channel broadcasted all documentaries-ACC)

14) Bir matematik öğretmeni 10 sorudan oluşan bir sözlü yaparak, 10 öğrencinin her birine bir soru sordu. 10 öğrencinin hepsi kendisine sorulan soruya doğru cevap verdi.

(A math teacher prepared a test consisting of ten questions in a class of ten students and asked only one question to each student. Each of the ten students gave the correct answer to their question.)

Bir öğrenci bütün sorulara doğru cevap verdi.

(A student gave correct answers to all questions-DAT)

15) Bir kainat güzellik yarışmasına katılan adayların her biri adet olduğu üzere kendi ülkelerinden bir erkeğin eşliğinde podyuma kadar yürüdüler.

(Each one of the Miss World contestants was accompanied by a man of their country to the podium.)

Bir erkek bütün yarışmacılara eşlik etti.
A man all contestants-DAT accompanied.
A man accompanied all the contestants.

16) Birkaç binadan oluşan bir alışveriş merkezinin güvenliğinden her bina icin bir güvenlikçi sorumluydu. Bir gün alışveriş merkezinde bomba ihbarı yapılmasının ardından bütün binalar boşaltıldı ve her güvenlikçi kendi sorumlu olduğu binayı kontrol etti.

(Several security guards were responsible for a shopping mall, which consists of several buildings. One guard was assigned for each building. One day, after receiving a bomb warning, all buildings were evacuated and each guard controlled the building that he was assigned to.)

Bir güvenlik görevlisi bütün binaları kontrol etti.
A security guard all buildings-ACC controlled.
(A security guard controlled all building.)

Existential Subject – Numeral Object (No Case)

17) Bir turizm şirketine abone olan üç müşteri çekilişle bedava tatil kazandı. Birinci müşteri İtalya'ya, ikinci müşteri Mısır'a, üçüncü müşteri ise Japonya'ya bedava tatile gittiler.

(Three customers of a tourism agency won free vacations from a raffle. The first customer went to Italy, the second customer went to Egypt, and the third customer went to Japan.)

Bir turist üç ülke ziyaret etti.

(A tourist visited three countries-OBL)

18) Bir öğretmen yazılıdan düşük not alan dört öğrencisine bir hafta içerisinde birer makale okuyup özetlemelerini istedi. Dört öğrencinin hepsi kendilerine verilen farklı makaleleri kısa süre içerisinde okuyup özetlediler.

(A teacher asked four of her students to read one article and summarize it in a week in order to make up for their low grades. All of these four students read and summarized their assigned articles in a short amount of time.)

Bir öğrenci dört makale okudu.
(A student read four articles)

19) Alanları farklı beş cerrah cumartesi sabahı alanlarıyla ilgili hastalıkları bulunan beş ameliyata girdiler. Ameliyata giren beş farklı hastanın problemleri birbirinden farklı olduğu için her hastayı farklı bir doktor ameliyat etti. Ameliyata giren beş hasta da kurtulmayı başardı. O gün hastanede sevinçle karşılandı.

(Five surgeons from different fields did five surgeries related to their own fields on Saturday morning. Since all patients had problems related to different areas in their bodies, a different doctor performed surgery on each patient. All five different patients managed to survive. That day people were happy at the hospital)

Bir cerrah beş hasta ameliyat etti.
(A surgeon performed surgery on five patients-OBL)

20) Düzenlenen bir şiir gecesine katılan bütün şairlarin her biri kendi yazdığı bir şiiri okudu. Geceye altı şair katıldığı için toplam altı şiir okundu.

(In a poetry night, every poet read only one of their poems. Since six poets attended the event, six poems were read in total.)

Bir şair altı şiir okudu.
(A poet read six poems-OBL)

Existential Subject – Numeral Object (Case)

21) Bir hastanede çalışan iki doktor geçen hafta cuma günü izin aldılar. Doktorlardan birisi nöroloji konferansına giderken, diğeri ortopedi konferansına katıldı.

(Two doctors working at a hospital took a day off last Friday. One of the doctors went to neurology conference, while the other one attended to an orthopedics conference.)

Bir doktor iki konferansa katildi.
(A doctor attended two conferences-DAT.)

22) Bir emniyet teşkilatında çalışan üç farklı polis büyük bir başarıya imza atarak aynı gün içerisinde birer hırsız yakalamayı başardı. Polis Rıza kuyumcuyu soyan hırsızı, polis Mesut marketi soyan hırsızı, polis Hüsnü ise bankayı soyan hırsızı yakaladı.

(Three different police officers in a police station managed to catch three different thieves within the same day with great success. Officer Riza caught the jewellery thief, officer Mesut caught the market thief, and officer Hüsnü caught the bank thief.)

Bir polis üç hırsızı yakaladı.
(A police caught three thieves-ACC)

23) Bir kralın farklı yemek türlerinden sorumlu dört farklı aşçısı vardı. Bu aşçıların birisi çorba, birisi et, birisi hamur işleri ve sonuncusu is tatlılardan sorumluydu. Bu aşçılar her gün uzmanı oldukları yemek çeşidinden birer tane hazırlayarak kralı memnun etmeye çalışırlardı.

(A king had four different cook responsible for different food types. One of them was responsible for soups, the other for baking, the third one for meat, and the last one for deserts. Every day, these cooks used to prepare a meal from their specialization areas and tried to please the king.)

Bir aşçı dört yemeği hazırlardı.
(A cook used to prepare four meals-ACC)

24) Bir belediye üç farklı sokağın üç işçi tarafından temizlenmesini istedi. Bunun sonucunda birinci işçi Zafer Sokağı'nı, ikinci işçi Barış Sokağı'nı, üçüncü işçi ise Varlık Sokağı'nı temizledi.

(A city centre asked three streets to be cleaned by three workers. First worker cleaned Zafer Street, the second worker cleaned Baris Street and the third one cleaned Varlik Street.)

Bir belediye işçisi üç sokağı temizledi.

(A worker cleaned three streets-ACC)

Numeral Subject – Universal Distributive Object

25) Bir beyaz eşyacı dükkanının taşınması sırasında yirmi nakliye işçisi çalıştı. İşçiler buzdolaplarının daha hızlı taşınabilmesi için ikişerli gruplara ayrılıp, her bir grubun sadece bir buzdolabı taşımasına karar verdiler.

(During a moving of an appliances store, twenty transportation workers worked. In order to carry fridges faster, workers were separated as groups of two, and each pair carried only one fridge.)

İki nakliyeci her buzdolabını taşıdı.

(Two movers carried every fridges-ACC)

26) On kişilik bir turist kafilesinde Topkapı ve Dolmabahçe Sarayları'nı ziyaret etmek isteyenler için oylama yapıldı. Oylama sonucunda grubun yarısı Dolmabahçe'ye giderken, diğer yarısı ise Topkapı Sarayı'na gitti.

(In a group of ten tourists, a voting was performed to determine who wanted to go Topkapi Palace, or to Dolmabahce Palace. As a result, half of the group went to Dolmabahce, and the other half went to Topkapi.)

Beş turist her müzeye gitti.
(Five tourist went to every museum-ACC)

27) Bir şirkette bulunan elli müşteri temsilcisi iki gruba ayrıldı. Birinci grup yeni kampanyaları tanıtmak için insanları araken, ikinci grup ise memnuniyet anketi yapmak için bütün müşterileri aradı.

(50 customer representative in a company were split into two groups. The first group called people to introduce their new plans, while the second representative group called customers for a service satisfaction survey.)

İki müşteri temsilcisi her numarayı aradı.
(Two customer representative called every number-ACC)

28) Düzenli olarak küresel toplantılar düzenleyen bir ülke prestijini artırmak için daha fazla asker almaya karar verdi. Eskiden toplantıya katılan 50 ülke başkanı toplam yüz askerle karşılanırken, artıştan sonra asker sayısı 150'ye çıkarıldı ve her başkanı bir fazla askerin karşılaması sağlandı.

(A country, which regularly holds global meetings, decided to recruit more soldiers in order to increase its prestige. Before recruitment, a total of one hundred soldiers were greeting fifty country presidents. After the recruitment, the number of soldiers were increased to one hundred fifty and each president were able to be greeted by one more soldier.)

Üç asker her başkanı karşıladı.
(Three soldiers greeted every president-ACC)

Numeral –Universal (Collective)

29) Bir defile gösterisinde deri ceket, kumaş ceket, ve kot ceket kategorilerinden birer ceket sergilenecektir. Hangi ceketin seçileceğine karar vermek için kendi kategorisinde uzman ikişer tasarımcı davet edildi. Tasarımcılar her ceket türünden birer tane ceket seçtiler.

(In a fashion show, one jacket from different categories (leather, classic, and jean) was going to be displayed. In order to decide which jackets would be displayed, two famous fashion designers from each category were invited. Designers selected one jacket from each category.)

İki tasarımcı bütün ceketleri seçtiler.
(Two designers selected all jackets-ACC)

30) İtalya'nın en büyük mafya babalarından olan dört mafya babası polis tarafından yakalandı, ancak polis bu mafya babalarının kaçmasından tedirgin olduğu için sıkı bir önlem aldı ve her bir suçlunun başına beş farklı polisi görevlendirdi. Toplam yirmi polis mahkeme boyunca suçluların yanında bekledi.

(Four of the greatest mafia leaders of Italy were caught by the police. Since police were anxious that they might escape, they took precautions and assigned five police officer to each mafia leader. A total of 20 police officers waited next to these leaders during their trial.)

Beş polis bütün suçluları bekledi.
(Five police officers waited all criminals-ACC)

31) Bir istihbarat teşkilatı daha etkili olabilmek için ajan sayısını artırdı. Eskiden her müdürün yalnızca bir ajanı varken, ajan sayısının ikiye katlanmasıyla her müdürün emrinde çalışan iki ajana sahip oldu.
(An intelligence agency increased its number of agents to be more effective. While there had been one agent assigned to each director before, each director had two agents after the increase.)

İki muhbir bütün müdürlere bilgi verdi.
(Two agents informed to all directors-DAT)

32) Düzenlenen bir konferansta beş farklı salonda aynı anda beş farklı konuşma düzenlendi. Her bir salon fiziksel olarak birbirinin aynı olup yirmi kişilik kapasiteye sahipti. Konuşmaların gerçekleştiği beş farklı salonun hepsi katılımcılar tarafından dolduruldu.

(In a conference, five different talks were given in five different rooms at the same time. Each room had physical capacity for twenty people. These five different rooms were full with participants during these talks.)

Yirmi katılımcı bütün konuşmaları dinledi.
(Twenty participants listened to all talks-ACC)

Numeral Subject – Existential Object (No case)

33) Nevruz'un gelmesiyle bir köydeki kadınlar dilek tutmak için dilek ağacına gittiler. Köyde çocuğu olmayan dört kadın çocuklarının olması için dilek tutarken, diğer kadınlar ev araba gibi maddi şeyler için dilek dilediler.

(With the upcoming of spring, all women in a village went to a wish tree to make their wishes. Four of these women wished to have a child, the others wished for materialistic things such as a home, a car etc.)

Dört kadın bir dilek tuttu.

(Four women made a wish-OBL)

34) Fazla aç olmayan beş arkadaş bir restorana gitti ve extra boy bir pizzanın kendileri için yeterli olacağını düşündüler ve siparişlerini ona göre verdiler.

(Five friends, who were not feeling very hungry at the moment, went to a restaurant and decided that one extra large pizza would be enough for all of them. They made their orders accordingly.)

Beş kişi bir yemek sipariş etti.
(Five people ordered a meal-OBL)

35) Bir düğün için gösterişli bir düğün pastası yapıldı. Pastanın tek kişi tarafından getirilmesi mümkün olmadığı için başka bir garson ona yardım etti.

(A gorgeous cake had been prepared for a wedding. Since the wedding cake was not possible to be carried by one waiter, another waiter helped him carry it.)

İki garson bir düğün pastası getirdi.
(Two waiters brought a wedding cake-OBL)

36) Ebeveynleriyle tatile giden üç kardeş en sevdikleri aktivite olan kumdan kale inşa ettiler. Her bir kardes kalenin bir bölümünü inşa ederek kaleyi kısa sürede tamamladılar.

(Three siblings, who went to a vacation with their parents, made a sand castle, their favorite activity. Each sibling built some part of the castle and they finished it together in a short amount of time.)

Üç kardeş bir kumdan kale yaptı.
(Three siblings made a sand castle-OBL)

Numeral Subject –Numeral Object (No Case)

37) Bir orman müdürlüğünde çalışan 12 ormancı iki kişinin birlikte kullanabileceği testereleri kullanarak ormana ağaç kesmeye gittiler. Her testereyle yalnızca bir ağaç kesen ormancılar, kestikleri ağaçları ofise taşıdılar.

(12 foresters working in a center went to a forest to cut down trees with axes that can only be used by two people. After cutting one tree with each axe, they carried logs back to the office.)

İki ormancı altı ağaç kesti.

(Two forester cut down six trees-OBL)

38) Bir mahallede on evsiz insane yaşamaktadır. Bir sosyal sorumluluk projesi kapsamında bir okulda bulunan 20 öğretmen ikişerli gruplar halinde mahalledeki 10 evsize yardım ettiler.
(10 homeless people were living in a neighborhood. For a social responsibility project, 20 teachers from the area were separated as groups of two and helped these homeless people.)

İki öğretmen on evsize yardım etti.
(Two teachers helped ten homeless-DAT)

39) Geçen gazetelerde çıkan bir habere göre dünyada daha önce çözülemeyen iki matematik problemi mevcutmuş. Bunlardan fonksiyon ile ilgili olanı Oxford Üniversitesi'nden beş matematik profesörü, geometri ile ilgili olanı ise Paris Üniversitesi'nden beş matematik profesörü çözmeyi başarmış.

(According to a news appeared recently, there had been two math problems, which had never been solved before. Five professors from Oxford University managed to solve the first problem about functions, five professors from Paris University managed to solve the other one related to geometry.)

Beş matematikçi iki problem çözdü.
(Five mathematicians solved two problem-OBL)

40) Sekiz kişilik bir arkadaş grubu baharın gelmesiyle bahçelerden meyve koparıp yemek istediler. Sekiz çocuk ikişerli gruplara ayrılarak her grup farkli bir bahçeye girdi ve meyveleri toplayıp yediler.

(With the arrival of the spring, eight friends wanted to pick fruits and eat them. Eight children split as groups of two, each group entered to a different garden, collected fruits, and ate them.)

İki çocuk dört bahçeye girdi.

(Two children entered to four gardens-DAT)

Universal Collective Subject – Numeral Object (No Case)

41) Mahallede yaşayan ve çok fakir olan bir kişinin üç beyaz eşyası bozuldu. Mahalledeki tamirciler bir araya gelerek bu eşyaları tamir etmeye karar verdiler.

(There was a very poor man living in a neighborhood and his three appliances broke down. All repairmen in that neighborhood came together and decided to repair these appliances.)

Bütün tamirciler üç beyaz eşya tamir ettiler.
(All repairmen repaired three appliances-OBL)

42) Şehir genelinde yakalanma emri ile aranan beş uyuşturucu satıcısı narkotik birimindeki bütün polislerin katıldığı bir operasyonla kıskıvrak yakalandı.

(Five drug dealers, who were being searched with a city-wide warranty, were caught by an operation involving all police officers in town.)

Bütün narkotik polisleri beş suçlu yakaladılar.
(All narcotic polices caught five criminals-OBL)

43) Bir teknoloji marketinde gerçekleştirilen ankete göre onlarca bilgisayar markası arasından mağaza müşterilerinin hepsi Apple ve Dell markalarını tercih ettiklerini, diğer markalara karşı çok sıcak bakmadıklarını belirttiler.

(According to a survey performed in a technology retailer, customers were asked about their two favorite brands. all of them told that they preferred Apple and Dell brands, and that they did not like other brands.)

Bütün müşteriler iki bilgisayar markası tercih ettiler.
(All customers preferred two computer brands-OBL)

44) Bir huzurevinde kalan yaşlılar için moral gecesi düzenlendi. Gece devam ederken herkesin çok sevdiği Yalgızam şarkısı çalmaya başlayınca bütün yaşlılar bu şarkıya eşlik edip hep birlikte söylediler.

(An motivation night had been conducted for people living in a senior center. While the program was continuing, everyone's favorite songs Yalgizam and Ayyuzlum started to play, and all people accompanied to these songs and sang them together.)

Bütün yaşlılar iki şarkı söylediler.

(All senior citizens sang two songs-OBL)

REFERENCES

ANTONYUK, SVITLANA. 2006. The scope of quantifier phrases in Russian: A QR analysis. *Linguistics in the Big Apple*.

ANTONYUK, SVITLANA. 2015. *Quantifier Scope and Scope Freezing in Russian.* NY: Stony Brook University Dissertation.

ANTONYUK-YUDINA, SVITLANA. 2011. Why Prosody Matters. An extended 4-page abstract of the presentation. In *Linguistic Society of America, Annual Meeting,* Pittsburg.

AYGEN-TOSUN, GÜLŞAT. 1999. Specificity and subject-object positions/Scope interactions in Turkish. In *Proceedings of the Conference on Turkic Linguistics at Manchester University* .8-10.

BALTAZANI, MARY. 2002. *Quantifier scope and the role of intonation in Greek.* CA: UCLA Dissertation.

BARKER, CHRIS. 2012. Quantificational binding does not require c-command. *Linguistic inquiry*, *43*(4), 614-633.

BEGHELLI, FILIPPO, and STOWELL, TIM. 1997. Distributivity and negation: The syntax of each and every. In *Ways of scope taking* . Springer Netherlands. 71-107.

BEJAR, SUSANA, and MASSAM, DIANE. 1999. Multiple case checking. *Syntax*, *2*(2), 65-79.

BENNETT, RYAN; ELFNER, EMILY; and MCCLOSKEY, JIM. 2016. Lightest to the right: an apparently anomalous displacement in Irish. *Linguistic Inquiry, 47(2)*, 169–234.

BOBALJIK, JONATHAN D., & WURMBRAND, SUSI. 2012. Word order and scope: Transparent interfaces and the ¾ signature. *Linguistic Inquiry*, *43*(3), 371-421.

BRODY, MICHAEL. 1995. *Lexico-Logical Form*. Cambridge, MA: MIT Press.

BÜRING, DANIEL. 1997. The great scope inversion conspiracy. *Linguistics and philosophy*, *20*(2), 175-194.

CHOMSKY, NOAM. 1970. Remarks on nominalization. *Readings in English transformational grammar*.

COOK, PHILIPPA; PAYNE, JOHN; BUTT, MIRIAM; and KING, TRACEY H. 2006. Information structure and scope in German. *LFG06*.

DEMIRCAN, ÖMER. 1996. *Türkçe'nin sesdizimi*. Der Yay., İstanbul.

DIESING, MOLLY. 1992. Bare plural subjects and the derivation of logical representations. *Linguistic Inquiry*, *23*(3), 353-380.

ENÇ, MÜRVET. 1991. The semantics of specificity. *Linguistic inquiry*, 1-25.

FODOR, JANET DEAN, and SAG, IVAN A. 1982. Referential and quantificational indefinites. *Linguistics and philosophy*, *5*(3), 355-398.

FOX, DANNY. 1995. Economy and scope. *Natural language semantics*, *3*(3), 283-341.

FREY, WERNER. 1993. *Syntaktische Bedingungen fur die semantische Interpretation: Uber Bindung, implizite Argumente und Skopus*. Berlin, Germany: Akademie.

GÖKSEL, ASLI. 1998. Linearity, focus and the postverbal position in Turkish. In *The Mainz Meeting Proceedings of the Seventh International Conference on Turkish Linguistics. Harrassowitz Verlag, Wiesbaden* 85-106

GÖKSEL, ASLI, and ÖZSOY, A. SUMRU. 1998. Is there a focus position. In *Studies on Turkish and Turkic languages. Proceedings of the Ninth International Conference on Turkish Linguistics. Lincoln College, Oxford*.

GRICE, H. PAUL 1975. Logic and conversation. In Cole et al. (ed.) *Syntax and Semantics 3: Speech Arts*, Elsevier. 41-58.

HARA, YURIE. 2003. Scope inversion in Japanese: contrastive topics require scalar implicatures. *Japanese/Korean Linguistics*, *13*, 245-256.

HEIM, IRENE. 1982. *The semantics of definite and indefinite NPs.* Amherst, MA: UMass Dissertation

HOFFMAN, BERYL. 1995. The computational analysis of the syntax and interpretation of" free" word order in Turkish. *IRCS Technical Reports Series*, *130*.

IONIN, TANYA. 2001. Scope in Russian: Quantifier Movement and Discourse Function. MIT.

IONIN, TANYA, and LUCHKINA, TATIANA. 2015. One reading for every word order: revisiting

Russian scope. In U. Steindl, T. Borer, H. Fang, A. García Pardo, P. Guekguezian, B. Hsu, C. O'Hara, & I.C. Ouyang (eds.), *Proceedings of the 32nd West Coast Conference on Formal Linguistics*. Cascadilla Proceedings Project. 21-30.

İŞSEVER, SELÇUK. 2003. Information structure in Turkish: the word order–prosody interface. *Lingua*, *113*(11), 1025-1053.

JACKSON, SCOTT. 2005. *Information, Truth, Structure, and Sound*. Tucson, AZ: University of Arizona Dissertation

JACKENDOFF, RAY S. 1972. *Semantic interpretation in generative grammar*. Cambridge, MA: MIT Press.

LUCKHINA, TATIANA, and IONIN, TANYA. 2015. The effect of prosody on availability of inverse scope in Russian. Unpublished Ms.

KELEPIR, MELTEM. 2001. *Topics in Turkish syntax: Clausal structure and scope*. Cambridge, MA: MIT Dissertation

KENNELLY, SARAH D. 1997. The presentational focus position of nonspecific objects in Turkish. *VIII. Uluslararası Türk Dilbilimi Konferansı Bildirileri*, 7-9.

KILIÇASLAN, YILMAZ 1994. Information packaging in Turkish. *Unpublished MSc. Thesis, University of Edinburg, Edinburg*.

KISS, KATALIN É. 2002. *The syntax of Hungarian*. Cambridge University Press.

KORNfiLT, JAKLIN. 1997. Turkish. *London and New York: Routledge*.

KRIFKA, MANFRED. 1998. Scope inversion under the rise-fall contour in German. *Linguistic Inquiry*, *29*(1), 75-112.

KRATZER, ANGELIKA. 1998. Scope or pseudoscope? Are there wide-scope indefinites?. In *Events and grammar* (pp. 163-196). Springer Netherlands.

KURAL, MURAT. 1992. Properties of scrambling in Turkish. *Ms., UCLA*.

ÖZYILDIZ, DENIZ. 2017. Quantifiers in Turkish. Unpublished Ms.

REINHART, TANYA., 1982. Pragmatics and linguistics: an analysis of sentence topics. *Philosophica* 27, 53–94.

REINHART, TANYA. 1997. Quantifier scope: How labor is divided between QR and choice

functions. *Linguistics and philosophy*, *20*(4), 335-397.

REINHART, TANYA. 2006. *Interface Strategies: Optimal and Costly Derivations.* Cambridge, MA: MIT Press.

ROOTH, MATS. 1985. *Association with Focus.* Amherst, MA: UMass Dissertation

SAG, IVAN A. 1976. A note on verb phrase deletion. *Linguistic Inquiry*, *7*(4), 664-671.

SCONTRAS, GREGORY; TSAI, CHENG-YU EDWIN; MAI, KENNETH; and POLINSKY, MARIA. 2014. Chinese scope: An experimental investigation. In *Proceedings of Sinn und Bedeutung*. *18.* 396-414.

SELKIRK, ELISABETH. 1984. *Phonology and syntax: The relation between sound and structure*. Cambridge, MA: MIT Press.

STOOPS, ANASTASIA, and IONIN, TANYA. 2013. Quantifier scope and scrambling in Russian: an experimental study. In S. Franks, M. Dickinson, G. Fowler, M. Whitcombe, & K. Zanon (eds.), *Formal Approaches to Slavic Linguistics #21: The Third Indiana Meeting.* Ann Arbor, MI: Michigan Slavic Publications.

SZABOLCSI, ANNA. (Ed.). 2012. *Ways of scope taking* (Vol. 65). Springer Science and Business Media.

TSAI, EDWIN; SCONTRAS, GREGORY; MAI, KENNETH; and POLINSKY, MARIA. 2014. Prohibiting inverse scope: An experimental study of Chinese vs. English. *Empirical Issues in Syntax and Semantics. 10*.

VALLDUVÍ, ENRIC. 1992. *The Informational Component, Outstanding Dissertations in Linguistics.* Garland, New York.

VALLDUVÍ, ENRIC, & ENGDAHL, ELISABETH. 1996. The linguistic realization of information packaging. *Linguistics*, *34*(3), 459-520.

ZUBIZARRETA, MARIA LUISA 1982. *On the Relationship of the Lexicon to Syntax.* Cambridge, MA: MIT Dissertation