LONG DISTANCE RIGHTWARD MOVEMENT OUT OF ECM CLAUSES IN TURKISH

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Sinan ÇAKIR

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ABSTRACT

The study focuses on the extractions out of exceptional case marking (ECM) structures in Turkish. It analyzes the arguments and adjuncts that originate within the ECM constructions and move to the verb final position. In this regard, scrambling to the background position of both embedded and main clauses are examined. The data of the study were collected through three data collection tools: a grammaticality judgment test, a self-paced reading task and a sentence completion task. 255 participants (86 men, 169 women, mean age: 20.4) who attend several universities of Turkey took part in the study. While selecting the participants, it was ensured that they did not receive prior information on the target structures. As the findings regarding scrambling to the matrix clause edge reveal, despite variation among target constructions, all such extractions were judged to be less acceptable than control sentences. In this respect, there exists a reverse asymmetry between Type 1 and Type 2 ECM clauses with regard to subjects and objects. As for adjuncts, they yield problems in both types. The study puts forward that the source of the problem is divergent depending on the given structure and the constituent in question. With regard to the rightward movement to the embedded clause edge, all target structures were found to be less acceptable and processed more slowly than control sentences. Regardless of the category of the constituent shifted to the right periphery, such movements result in ungrammaticality, which proves that ECM clauses have defective CPs that lack the necessary uninterpretable feature required to license extraction.

ÖZ

Çalışma Türkçedeki Kuraldışı Durum Yükleme (KDY) yapılarından dışarı doğru yapılan taşımalara odaklanmaktadır. Çalışma dahilinde, KDY yapıları içerisinden türetime katılan ve eylem ardı konuma çalkalanan üye ve eklentiler incelenmektedir. Bu bağlamda, hem yan tümcecik sonuna hem de ana tümcecik sonuna yapılan taşımalar ele alınmaktadır. Veriler 3 veri toplama aracıyla toplanmıştır: bir dilbilgisellik değerlendirme testi, bir kendi hızında okuma uygulaması ve bir tümce tamamlama uygulaması. Türkiye'nin çeşitli üniversitelerinde eğitim görmekte olan 255 katılımcı (86 erkek, 169 kadın, ort. yaş: 20.4) çalışmaya katılmıştır. Katılımcı seçiminde hedef konu üzerine herhangi bir eğitim almamış olmalarına dikkat edilmiştir. Ana tümcecik sonuna yapılan taşımalar üzerine elde edilen bulgular hedef yapılar arasında farklılıklar olsa da kontrol tümcelerine kıyasla tümünün daha az kabul edilebilir olduğunu ortaya koymuştur. Bu açıdan, birinci tür ve ikinci tür KDY yapıları arasında özneler ve nesneler açısından ters bir bakışımsızlık bulunmaktadır. Mevcut çalışma bu durumun sebebinin bahsi geçen yapının ve taşınan kurucuların özelliklerine bağlı olarak çeşitlilik gösterdiğini savlamaktadır. Yan tümcecik sonuna yapılan taşımalar değerlendirildiğinde, tümünün kontrol tümcelerine kıyasla daha az kabul edilebilir bulunduğu ve daha yavaş işlemlendiği gözlemlenmiştir. Artalana atılan kurucu türüne bakmaksızın tüm taşımalar dilbilgisi dışılıkla sonuçlanmaktadır. Bu durum KDY yapılarındaki tümleyici öbeklerinin kusurlu olduğunu ve artalan taşımaları için gerekli olan yorumlanamaz özelliği taşımadığı savını desteklemektedir.

INTRODUCTION

Exceptional case marking is the phenomenon in which the subjects of the embedded clauses receive object case marking rather than the subject case marking. More precisely, in some cases, the subjects of the lower clauses are exceptionally marked with the accusative case. Chomsky (2000; 2001) claims that such constructions lack the CP (complementizer phrase) layer and their subjects cannot receive the case marking from the lower T but get it from the matrix verb exceptionally. In other words, since such embedded clauses do not contain a CP layer, they cannot prevent the intervention of the matrix verb in the case marking process. This view is challenged in many other studies which indicate that ECM clauses have CPs, as well (Gallego, 2009; Kim, 2024; Pesetsky and Torrego, 2007; Richards, 2007). Such studies defend the existence of a defective CP in ECM clauses rather than a complete absence of the CP domain. There are also some other studies which assert that CPs are actually required in ECM constructions in certain languages (e.g. Wurmbrand, 2023). Hence, maintaining the absence of a CP layer in such constructions forms the strong form of the argument, which is challenged by many other weaker forms. All in all, there seem to be a consensus on the fact that such structures lack full-formed CP layers which can accomplish its functions in full sense.

ECM constructions are observed in several languages. For instance, in English the verbs such as *prove, judge, believe* or *want* license the ECM constructions:

(1) They believe [us to have had a car before]

(2) The prosecutor proved [her to be guilty]

(3) The manager wanted [me to come to the office early tomorrow].

(4) They judge [us to be ridiculous.]

Canonically, the subjects of the lower clauses receive the nominative case in English. However, in (1) - (4), they are marked with the accusative case, exceptionally. The ECM constructions are observed in varying forms in several other languages as well. For instance:

(5) John-un [Mary-lul yeppu-ta-ko] mit-nun-ta.

John -TOP Mary-ACC pretty-DEC-COMP believes

'John believes Mary to be pretty.'

(6) Ja s~itaju Ivana umnym

I believe Ivan-ACC smart-INST

'I consider Ivan smart'

(5) and (6) exemplify the ECM clauses in Korean and Russian, respectively. The subjects of the embedded clauses in these sentences are also exceptionally marked with the accusative case.

1.1 The ECM clauses in Turkish

Turkish is another language that contains ECM clauses. In this language, the subjects in the lower CPs are canonically marked with either nominative or genitive case markers:

(7) Metin [sen İstanbul'a gidince] çok üzüldü.

Metin you İstanbul-DAT go-GER very get_upset-PAST

"Metin got very upset when you had gone to İstanbul."

(8) Cenk [Ersin'in ödevini yaptığını] söyledi.

Cenk Ersin-GEN homework-3P-ACC do-NFN-3P-ACC say-PAST

'Cenk said that Ersin had done his homework.'

On the other hand, some verbs such as *sanmak (think), zannetmek (think)* or *bilmek (know)* license ECM structures:

(9) O [bizi Bursa'ya gittik] zannediyor.

s/he we-ACC Bursa-DAT go-PAST-1PL think-PROG

S/he thinks that we went to Bursa.

(10) Kenan [seni ödevini yaptın] sanıyor.

Kenan you-ACC homework-ACC do-PAST-2P think-PROG

'Kenan thinks that you have done your homework.'

(11) Ebru [beni kitabı okudum diye] biliyor.

Ebru I-ACC book-ACC read-PAST-1P saying assume-PROG

'Ebru assumes that I have read the book.'

The ECM constructions in Turkish may lack the agreement markers on the verb, as well. That is to say, the verbs of the main clauses may solely bear the tense-aspect-modality markers and they may be incomplete with regard to person-number marking:

(12) O [bizi Bursa'ya gitti] zannediyor.

s/he we-ACC Bursa-DAT go-PAST think-PROG

'S/he thinks that we went to Bursa.'

(13) Kenan [seni ödevini yaptı] sanıyor.

Kenan you-ACC homework-ACC do-PAST think-PROG

'Kenan thinks that you have done your homework.'

(14) Ebru [beni kitabı okudu diye] biliyor.

Ebru I-ACC book-ACC read-PAST saying assume-PROG

'Ebru assumes that I have read the book.'

In (12) – (14), the verbs of the main clauses lack person number marking, yet the sentences are still grammatical. Hence there are two types of ECM clauses in Turkish with regard to being complete or incomplete with agreement markers.

There are three different analyses for the question of how the subjects of the ECM clauses receive the objective case marking in Turkish (Arslan Kechriotis, 2016): (a) The subjects of the ECM clauses raise to the main clause and receive their objective case from the matrix verbs. The scholars such as Knecht (1986), Moore (1998) and Özsoy (2005), Zidani-Eroğlu (1997) support this analysis. (b) The lower subjects stay in-situ and receive their objective case directly from the matrix verb. Aygen (2002), Meral (2005), Oded (2006) and Öztürk (2005) are some of the scholars who favor this analysis. (c) The objective case marked phrases do not remain in-situ or move to the matrix clause. They are base-generated in the main clause. This assertion is supported by İnce (2006).

The present paper favors the in-situ analysis. More precisely, it supports the claim that the subjects of the ECM clauses remain in situ and marked with the accusative marker directly from the matrix verb. They do not move to the matrix clause, at all.

Although the subjects may not move to the upper clause for case marking, it is doubtless that the constituents within the ECM clauses scramble to different parts of the sentence by the requirement of the information structure. The arguments or the adjuncts within the lower clause may be focalized, topicalized or backgrounded. The present paper aims to analyze the constructions in which the constituents within the ECM clauses scramble to verb final position. Before moving ahead, however, it is necessary to provide basic information about scrambling in Turkish.

1.2 Scrambling in Turkish

In Turkish, the unmarked constituent order is SOV, yet the other permutations are also possible in compliance with the information structure:

(15) a. Kerem elmayı yedi.
Kerem apple-ACC eat-PAST

b. Kerem yedi elmayı.
Kerem eat-PAST apple-ACC

c. Elmayı yedi Kerem.
apple-ACC eat-PAST Kerem

d. Elmayı Kerem yedi.
apple-ACC Kerem eat-PAST

e. Yedi Kerem elmayı.

eat-PAST Kerem apple-ACC

f. Yedi elmayı Kerem.

eat-PAST apple-ACC Kerem

'Kerem ate the apple'

In these sentences, the constituents move to different positions for focalization, topicalization and backgrounding purposes. In general, clause initial position is considered to be the default topic position in Turkish. The pre-verbal position is taken to be the focus position while the post-verbal position is cited to be the background position (Erguvanlı Taylan, 1984; İşsever, 2003).

Scrambling is not only a local process. The constituents can also scramble from the embedded clauses to different parts of the sentences. Such long distance movements may be subject to locality conditions. That is, if there is an intervening island structure, the derivation may result in ungrammaticality. Within minimalism, one of such locality conditions is the Phase Impenetrability Condition.

1.3 The Phase Impenetrability Condition

The Phase Theory, proposed by Chomsky (2000; 2001), asserts that derivations are produced phase by phase. According to this theory, CPs, vPs (light verb phrases) and may be DPs (determiner phrases) constitute the phases where the derivation is sent to the spell-out. Their heads and specifier positions are defined to be the phase edges which allow further operations. On the other hand, the constituents that are not at the phase edges are no longer accessible in the rest of the derivation. This condition is referred to be the *Phase Impenetrability Condition* (PIC). It requires that all movements should be done cyclically through phase edges. The PIC provides minimalist explanations for the classical Wh-island Constraint and the Complex NP Island Constraint. Along with the PIC, Distinctness Condition is the other phenomenon that the present study touches upon.

1.4 Distinctness Condition

Richards (2010) puts forward that more than one node of the same functional element cannot occur in an asymmetric c-command relation in the same phase. To put it another way, this condition requires that the elements that exist in the same spell-out domain should be distinct from one another. For instance:

(16) a. "It is raining" said the weatherman to the anchorwoman.

b.* "It is raining" told the weatherman the anchorwoman.

In (16a), the adjacent DP and PP projections do not yield any ungrammaticality. On the other hand, (16b) is ungrammatical since two DPs exist in the same spell-out domain.

In contrast to English, the adjacency of two DPs in the same domain does not cause any problems in several other languages such as German (Moltman, 1995; Sauerland, 1995) or Japanese (Takahashi, 1994):

(17) Jede Frau sah jeden Mann ausser diese Frau diesen Mann.

Every woman see-PAST every man except this woman this man

* 'Every woman saw every man except this woman this man'

(18) Watashi –wa dono otokonoko-ni-mo hoshigatteita subete-no hon-o ageta-ga, dare-ni nani-o ka wasureta.

I TOP every boy DAT want-PAST every book gave buy who-DAT what-ACC forgot

'I gave every boy all the books he wanted, but I have forgetten who what.'

The difference stems from the fact that Japanese and German have rich case marking compared to English. Hence, morphological markers on the DPs make them distinct from each other, which rule out the distinctness effects.

İnce (2012) analyzed this condition in Turkish context. According to him, the reason for the ungrammaticality in

the following example stems from the fact that non-distinct elements occur in the same domain:

(19) *Ercani Hasan [ti kek-i ye-di] san-ıyor.

Ercan Hasan cake-ACC eat-PAST think-PROG

'(Ercan) Hasan believes Ercan to have eaten the cake.'

As he asserts, the problem in this sentence is the existence of the adjacent nominative case marked subjects. In other words, since the subjects of the matrix clause and embedded clause receive the same case, the scrambling of the embedded subject to clause initial position yields ungrammaticality. On the other hand, a similar movement in (20) does not involve any problems:

(20) Ercan-ın*i* Hasan [t*i* kek-i ye-diğ-i]-ni söyle-di.

Ercan-GEN Hasan cake-ACC eat-NFN-3P-ACC say-PAST

'(Ercan) Hasan said that Ercan ate the cake.'

In this sentence, the subjects of the embedded clause and the main clause are marked with different case markers. Since they are distinct from each other, the movement of the lower subject to the matrix CP does not involve any ungrammaticality.

1.5 The Present Study

The ECM clauses are structurally different from the complement clauses and the complex NPs. First of all, there are no DP layers in such constructions, which decreases the number of the phases. Secondly, they have defective CP layers (if not they lack them at all), which cannot prevent the intervention of the matrix verbs. For these reasons, it is highly probable that the ECM sentences may display different scrambling behaviors. Moreover, the Phase Impenetrability Condition and the Distinctness Condition are two important constraints that may play roles in the process. Hence, the present study aims to examine the extractions out of ECM constructions to verb final position to analyze such considerations.

The study aims to provide answers for the following research questions:

1. Does the scrambling of the elements out of ECM clauses to verb final position result in grammaticality?

2. Are there any slowdowns in the processing of the target structures in the context of the first research question?

3. Is there an asymmetry among the types of scrambled constituents?

4. Is there a difference between the ECM clauses that are complete or incomplete with regard to person-number marking in the target contexts?

5.Are the Phase Impenetrability Condition or the Distinctness Condition violations observed in such displacements?

METHODOLOGY

In this part, the methodology of the study is presented.

2.1 Participants

The participants of the study were selected among the students studying at Konya Necmettin Erbakan University, Ankara Hacettepe University, Kayseri Erciyes University and Istanbul Medeniyet University. 255 participants (86 men, 169 women, average age: 20.4) were included in the data collection process of the study. While selecting the participants, it was ensured that they did not receive any formal education on the target subject-matter. To that end, the tests were not given to the students in language and linguistics departments. Rather, they were administered to the ones in the departments such as history, sociology or psychology.

2.2 Data Collection Tools

Three data collection tools were used in the study: a grammaticality judgment test (GJT), a self-paced reading task (SPRT) and a sentence completion task (SCT).

2.2.1 The Grammaticality Judgment Test

The Grammaticality Judgment Test consists of 78 items in total and it was presented to 155 participants (54 men, 101 women, average age 20.9) in 4 sessions. Of all the test

items, 48 of them are the target sentences and 30 of them are the control sentences. The participants were asked to assess the grammaticality of the test items on a +2, -2 Likert scale. The sentences vary depending on whether the constituents in question are a subject, object or an adjunct and whether they are moved to the subordinate clause or the main clause. In this regard, both types of ECM clauses (complete & incomplete with respect to agreement markers) were tested. (21) - (23) exemplify these items:

(21) Kemal dün akşam vazoyu kırdım sanıyor beni.

Kemal last evening vase-ACC break-PAST-1P think-PROG I-ACC

'Kemal thinks that I broke the vase last night.'

(22) Merve seni parkta kaybettin diye biliyor kolyeyi.

Merve you-ACC park-DAT lose-PAST-2P saying know-PROG necklace-ACC

'Merve assumes that you lost the necklace in the park.'

(23) Ece beni bu haberi duymadım zannediyor dün sabah.

Ece I-ACC this news-ACC hear-NEG-PAST-1P think-PROG yesterday morning.

'Ece thinks that I did not hear this news yesterday morning.'

In (21)- (23), the subject, the object and the adjunct scramble out of Type 1 ECM clauses to sentence final position, respectively. Their Type 2 versions were also given to the participants. In the sessions, it was ensured that the participants saw and assessed both types. For instance, a participant assessed the Type 1 version of (21) and Type 2 version of (22) while another participant assessed vice versa.

(21) - (23) exemplify the movements to the sentence final position. Similar structures which involve the movements to the final position of the embedded clause were given to the participants:

(24) Ece bu haberi dün sabah duymadım beni zannediyor

Ece this news-ACC yesterday morning. hear-NEG-PAST-1P I-ACC think-PROG

'Ece thinks that I did not hear this news yesterday morning.'

(25) Kemal beni dün akşam kırdım vazoyu sanıyor.

Kemal I-ACC last evening break-PAST-1P vase-ACC think-PROG

'Kemal thinks that I broke the vase last night.'

(26) Merve seni kolyeyi kaybettin parkta diye biliyor.

Merve you-ACC necklace-ACC lose-PAST-2P park-DAT saying know-PROG

'Merve assumes that you lost the necklace in the park.'

In (24) – (26), the target constituents move out of Type 1 ECM clauses to verb final position of the embedded clause. Their Type 2 versions were also administered in an alternating order. In the sessions, it was noted that the different participants assess different structures. That is to say, only one version of the test item is given to each participant.

In (21)-(26), six examples were presented. They are all type 1 ECM clauses. When their type 2 versions are also counted, it makes 12 examples. The GJT consists of 48 target items, which means that there exists 4 items that focus on each triplet conditions. For instance, there are 4 items that involve the scrambling of the object out of Type 2 ECM clauses to the verb final position of the main clause.

2.2.2 The Self-Paced Reading Task

The Self-Paced Reading Task, prepared by the PsychoPy 2023.2.3 program, consists of 44 items in total. In 24 of

these items, the constituents moved from the ECM clauses to the verb-final positions. Along with these items, 18 others were added to the task for control purposes. The remaining 2 items were used at the beginning of the task to warm the participant up. The task was administered to 50 participants (17 men, 33 women, average age: 20.1) in 4 sessions. The items varied depending on whether the scrambling constituent is an argument or on adjunct and whether they moved to the sentence initial position or the sentence final position. All items consist of 9 words (54-57 characters).

In a quiet room, the test was administered to the participants one by one. In the test, every three target sentences were followed by a simple question on one of them. The participants sitting in front of the computer screen were asked to proceed at their own reading pace by pressing the space bar on the keyboard. To answer the questions, they were directed to use the right/left arrow keys. The reaction times of the participants were recorded by the program and they were analyzed by the researcher later. The following items exemplify this task:

(27) Annem ve babam geçen sene bitirdim üniversiteyi zannediyor beni.

Mother-1P and father 1P last year finish-PAST-1P university-ACC think-PROG I-ACC

'My parents think that I graduated from university last year.'

(28) Betül ve Zeynep seni zamanında tamamladın diye biliyor projeyi.

Betül and Zeynep you-ACC time-3P-LOC complete-PAST-2P saying know-PROG project-ACC

'Betül and Zeynep assume that you completed the project on time.'

(29) Kemalettin beni televizyonu tamir ettim diye biliyor geçen hafta.

Kemalettin I-ACC television-ACC repair do-PAST saying know-PROG last week

'Kemalettin assumes that I repaired the television last week.'

Annem ve babama göre ben ne zaman üniversiteyi bitirdim?

'According to my parents, when did I graduate from the university?'

Geçen ay (Last month) Geçen yıl (Last year)

Similar to the previous task, the subject, the object and the adjunct scramble out of Type 1 ECM clauses to sentence final position, respectively in these items. Type 2 versions of them were also administered to the participants in an alternating manner. Similarly, their versions in which the target constituents move to the verb final position of the embedded clause were given, as well. It was again ensured that each participant assessed only one version of the items.

2.2.3 Sentence Completion Task

The Sentence Completion Task consists of 34 items in total and it was administered to 50 participants (15 men, 35 women, average age 19.2) in 4 sessions. 18 of the items are the target sentences and 16 of them are control sentences. All sentences contained two spaces, in different parts of the sentence. The participants were asked to fill in these blanks with the given words. They were required to choose the more appropriate one even when they thought that neither of the words was suitable for the gap. The task aimed to collect data on the possible argument & adjunct asymmetry. Similar to the other data collection tools, the test items vary depending on whether the displaced constituent is a subject, object or an adjunct and whether it is moved to the embedded clause or the matrix clause. The following items exemplify this task:

(30) O _____ dün gördün sanıyor _____.

s/he yesterday see-PAST-1P think-PROG

seni (you-ACC) Murat'ı (Murat-ACC)

(31) O seni _____ gördün sanıyor _____.

s/he you-ACC see-PAST-1P think-PROG

Murat'ı (Murat-ACC) dün (yesterday)

(32) O _____ Murat'ı gördün sanıyor _____.

s/he Murat-ACC see-PAST-1P think-PROG

dün (yesterday) seni (you-ACC)

In (30) – (32), the participants were asked to fill in the blanks either with the given subjects, objects or adjuncts. All these items contain Type 1 ECM clauses. Similar to the other tasks, their Type 2 versions were also given to the participants. In a similar vein, their versions in which the second blank follows the embedded verb were also administered. It was again ensured that each participant assessed only one version of the items. The data obtained with the data collection tools were analyzed, grouped and tabulated.

2.3 Ethics and consent

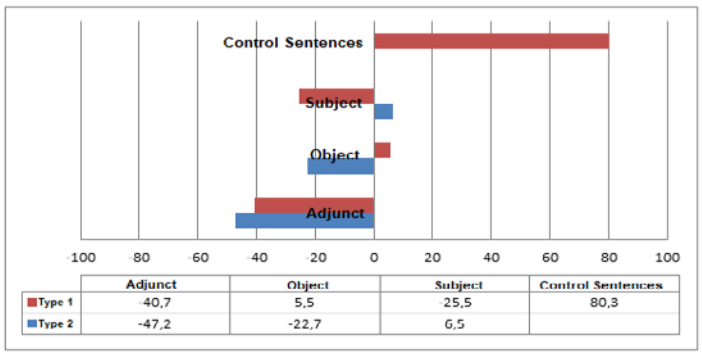
The study has received ethical approval from Necmettin Erbakan University Social and Humanities Ethics Committee under the decision number 2023/390, dated September, 08, 2023. All the participants signed the consent form at the beginning of the data collection process.

FINDINGS & DISCUSSION

In this part, the results obtained by the three data collection tools are presented and discussed with respect to the research questions.

3.1 The Results for the Grammaticality Judgment Test

The findings for the Grammaticality Judgment Test are demonstrated in two figures. In Figure 1, the data obtained for the scrambling of the constituents to the background position of the matrix clause are displayed:



	Adjunct	Object	Subject	Control Sentences
Type 1	40,7	5,5	25,5	80,3
Type 2	-47,2	-22,7	6,5	

Figure 1 The Results for Backgrounding to the Main verb in GJT

All target structures were rated to be significantly worse than the control sentences. The one-way ANOVA results indicate that there is a significant difference among the groups [F (3.032), p=0,0001). This situation cannot be explained through the violation of the Phase Impenetrability Condition. In contrast to complex NPs, the ECM constructions do not involve any intervening island structures. Therefore, it is reasonable to assume that they would be assessed as well as the control sentences. However, these results indicate that there is a grammaticality problem in the target sentences and there should be other reason(s) for it other than the PIC. In this respect, the figure should be analyzed in caution.

In the analysis of the data obtained for the scrambling of the subjects, it is observed that there exists an asymmetry between the ECM structures that are complete (Type 1) and incomplete (Type 2) with regard to person-number marking. Though both groups are remarkably worse than the control sentences, Type 2 ECM clauses are relatively better than the Type 1 clauses and the results obtained for them are at the positive side of the correlation. The independent samples t-test results indicate that the difference between them is significant (t=2.65, p=0.0062). The question that arises at this point is why the existence of the person number marking decreases the grammaticality of such structures. In the present paper, it is maintained that it stems from Distinctness effects. Before moving ahead, it should be noted here that distinctness might not be viewed as the immediate source of the problem since there are not any adjacent non-distinct elements in such structures. However, as Richard (2010, p. 15) also states, Distinctness effects are not necessarily about linear adjacency. In other words, the constituents do not have to be adjacent to each other in order to display such effects. Hence, it appears that the background position in these constructions can only be occupied by the matrix subjects and the movement of the embedded subjects to the background position appears to create a Distinctness violation. In this regard, the following sentences should be taken into account:

(33) a. Kemal [{ben} İtalya'ya gittim] sanıyor ben.

Kemal [I} Italy-DAT go-PAST-1P think-PROG I

b. Kemal [{beni} İtalya'ya gittim] sanıyor beni.

Kemal [I-ACC} Italy-DAT go-PAST-1P think-PROG I-ACC

c. Kemal [{beni} İtalya'ya gitti] sanıyor beni.

Kemal [I-ACC} Italy-DAT go-PAST think-PROG I-ACC

'Kemal thinks that I have been to Italy.'

(33a) involves a finite complement clause and the derivation is not subject to any locality constraints. Nevertheless, the scrambling of the embedded subject to the background position of the matrix clause results in ungrammaticality. The problem here is the nominative case marking in the embedded clause. Since the subjects of both clauses are marked with the nominative case, the scrambling of the embedded subject to the background position is confused with that of the main subjects. That is to say, the movement gives rise to Distinctness effect. Due to the person-number marking on the embedded verb, the subject of the embedded clause can be dropped. Hence non-existence of the subject in its default position would not be a problem. The backgrounded subject, therefore, appears to be the unnecessary repetition of the matrix subject, which does not fit the person-number marking on the matrix verb. For this reason, the sentence yields ungrammaticality. With regard to (33b), the person-number marking on the embedded verb makes the existence of the embedded subject unnecessary, as well. Hence, the case is rather similar to that of (33a) with the exception of the accusative marking on the subject, which does not make any difference on the fact that it does not fit the number-person marking on the matrix verb. In short, both (33a) and (33b) are not grammatical in Turkish due to the person-number marking on the embedded verb. As for (33c), the case is different. There is no person-number marking on the embedded verb so the lower subject is obligatory. The backgrounded embedded subject is not confused with the matrix subject due to the accusative case marking. Therefore, the items in this group are relatively more acceptable than the one in (33a) and (33b).

With respect to objects, there exists an opposing asymmetry. Type 2 constructions are worse than the Type 1 constructions and this difference is also statistically significant: (t=2.14, p=0.0013). To put it another way, the existence of the person-number marking on the embedded clause set forth better results. The reason for this situation might be that subject - verb agreement is more deficient in Type 2 constructions due to the absence of the related markers on the verb. In addition to this, the movement of the object makes the embedded clause more ill-formed. On the other hand, the existence of the person-number marking on the embedded verb in Type 1 constructions seems to preserve the unity of the embedded clause and the scrambling of the object to the matrix clause gives less harm to this unity. For this reason, Type 1 constructions were rated to be more acceptable compared to Type 2 constructions.

The movements of the adjuncts project the poorest results for both groups and there is no significant difference between them: (t=0.23, p=0.2668). Since these embedded clauses are defective, it seems that the adjuncts which originate within them are regarded to be main clause adjuncts when they are scrambled to background position of the matrix verb. That is to say, the backgrounding in such cases is expected to be done from the matrix CP, which triggers the ungrammaticality observed in ECM clauses. The (non)existence of the person-number marking on the embedded verbs do not make remarkable difference in this regard.

In Figure 2, the data obtained for the scrambling of the constituents to the background position of the embedded clause are demonstrated:

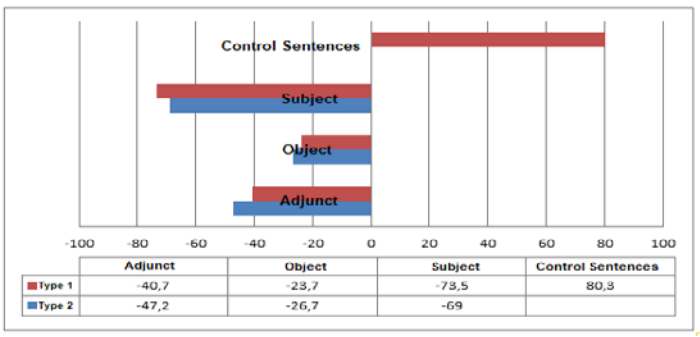


Figure 2: The Results for Backgrounding to the Embedded Verb in GJT

Scrambling to background position of the embedded clauses was rated to be ungrammatical for all constituents in both groups. No matter the backgrounded constituent is a subject, an object or an adjunct, the movement results in ungrammaticality. The (non)existence of the person-number markers on the embedded verb does not make much difference either. All results are at the negative side of the correlation and this finding is consistent with the assertion that such constructions have defective CPs which lack the necessary uninterpretable feature that triggers backgrounding. It should be noted here that the target of backgrounding operation is the CP layer. Since the defective CP projection does not contain a u[background] feature that attracts the constituents involving its interpretable counterpart, it is impossible to background anything in such clauses.

The inter-comparisons among the constituents reveal that the acceptability of the objects in such scrambling cases is significantly better than those of the other target constituents: object & subjects (t=0.86, p=0.0040); objects & adjuncts (t=0.48, p=0.0224). The reason for this situation might be the position of the constituents in the sentence. The canonical position of the objects is often the immediate pre-verbal position. Hence, the movement of an element from immediate pre-verbal position to immediate post-verbal positon would be less costly compared to other operations which are relatively more long distanced.

3.2 The Results for the Self-Paced Reading Task

Table 1 and Table 2 below present the findings obtained at the Self-Paced Reading Task. In the first table, the results for scrambling to verb final position of the main clause are displayed:

Table 1. The Results for Backgrounding to the Main Verb in SPRT

	Control Sentences	Subject	Object	Adjunct
Type 1	4.317	4.526	4.762	5.526
Type 2	4.129	4.485	4.825	5.018

Note. The numbers are given in milliseconds.

The data obtained in the Self-Paced Reading Task are in parallel with the ones obtained for the Grammaticality Judgment Test. The test items that involved the scrambling of all target constituents were processed remarkably slower compared to the control sentences. The difference among the groups is statistically significant: [F (3.082), p=0,0034]. Since backgrounding of all constituents were rated to be problematic compared to the control group in GJT, the slowdown in the processing of these items is in line with these data. The reverse asymmetries observed between Type 1 and Type 2 constructions in the processing of subjects and objects are also consistent with the data of the first test. In the scrambling of the subjects, Type 1 constructions were processed slower. On the other hand, there was a reverse case for the scrambling of the objects. These data support the claim that the existence of the person-number marking on Type 1 constructions has a negative effect on their acceptability similar to the case observed on the finite complement clauses. In such clauses, the scrambling to sentence final position seems to be reserved for the subjects of the main clauses. On the other hand, the absence of the person-number marking on the embedded verb in Type 2 constructions makes the existence of the overt embedded subject compulsory. Furthermore due to the non-existence of the person-number marking, they differ from the finite embedded clauses, as well. Hence they cannot be treated in a similar way. For these reasons, the acceptability rating and processing speed for Type 2 constructions in the movement of the subjects outruns those for Type 1 constructions.

On the other hand, the absence of the person-number marking on the embedded verb complicates the extraction of the embedded object since the lower clause is already rather defective. That is to say, the movement of the object decreases the unity of the ECM clause which is already problematic due to the absence of the agreement markers on the verb.

As for the processing of the adjuncts, such items were read remarkable slower compared to the ones involving other target constituents. This finding is also in line with the ones obtained in the Grammaticality Judgment Test. It seems that the participants had difficulty in determining whether the backgrounded adjunct had originated within the embedded clause or the matrix clause. This confusion seems to slow down the reading times of such items.

Table 2 displays the findings obtained for the scrambling of the target constituents to the background position of the embedded verb:

Table 2. The Results for Backgrounding to the Embedded Verb in SPRT

	Control Sentences	Subject	Object	Adjunct
Type 1	4.317	5.380	4.856	4.814
Type 2	4.129	5.417	4.488	4.871

Note. The numbers are given in milliseconds.

The processing times for all sentences that involved any of the target constituents were slower than those for the control sentences. The one-way ANOVA results indicate that the difference among the groups is statistically significant: [F(2.022), p=0,0136]. This finding is also consistent with the assertion that the CP projection is defective in ECM clauses. Due to the absence of the necessary uninterpretable feature, nothing can be moved to the verb final position of the lower clause. The grammaticality problems that the target test items are subject to should be the reason for the slowdown in the reading speeds of these items.

The comparisons among the target items reveal that the movement of the subjects to the background position of the embedded clause is more problematic compared to the movement of the other constituents. The reading speeds of the test items containing the scrambling of the subjects were remarkably slower than those of the other target constituents. In this respect, there was not any difference between Type 1 and Type 2 constructions, either. This finding shows that the movement of the subjects appears to be more costly compared to the movements of the objects and adjuncts which originate in a relatively closer position in the derivation.

3.3 The Results for the Sentence Completion Task

The findings for the Sentence Completion Test are presented in two figures. Figure 3 demonstrates the results obtained for the scrambling of the constituents to the background of the matrix verb.

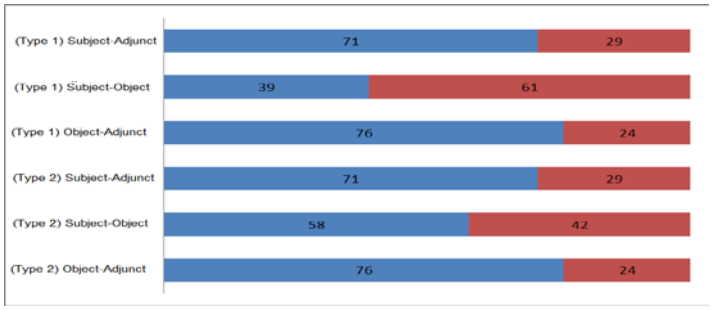


Figure 3 The Results for Backgrounding to the Main Verb in SCT

The asymmetries between Type 1 and Type 2 constructions with regard to the movement of the subjects and objects are observed in this task, as well. In Type 1 constructions, the scrambling of the objects was more preferable for the participants. On the other hand, subjects were favored in Type 2 ECM clauses. Since Type 1 constructions resemble the finite complement clauses with the exception of having their subjects accusative marked rather than the nominative, they are treated as the finite complement clauses. They cannot move to the background position of the matrix verb since this position seems to be reserved for the subjects of the main clause, which indicates Distinctness effects. On the other hand, in the absence of the person-number marking on the embedded verb, the ECM subjects cannot be dropped and they must be realized overtly. Hence, their movement to sentence final position is more acceptable than the other aforementioned constructions.

The assertion that the person number marking on the embedded verb facilitates the outer movement of the objects is supported by the present data, as well. In the absence of these markers, the embedded ECM clauses are relatively more defective and the additional extraction of the objects out of the lower clause causes further impairment in the unity of the construction. Therefore, the scrambling of the objects out of ECM clauses becomes less preferable in the absence of the person number markers on the embedded verb.

In the other data collection tools of the study, it was observed that the extraction of the adjuncts are more problematic compared to those of the arguments. The findings of this task are in line with these observations.

In Figure 4, the data obtained for scrambling of the target constituents to the background position of the embedded clause are presented:

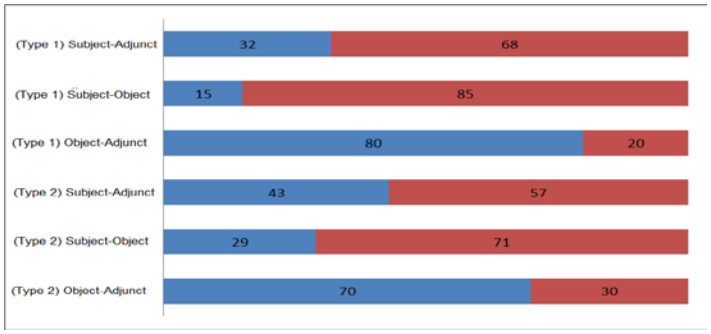


Figure 4 The Results for Backgrounding to the Embedded Verb in SCT

Before examining the Figure, it should be noted that all scrambling cases in both groups were assessed to be ungrammatical in the Grammaticality Judgment Test. Moreover, they all had slower processing times compared to the control sentences in the Self-Paced Reading Task. Therefore, the percentages obtained in this task do not mean that any of the target structures are grammatical. They just represent the relative preferability. In this respect, the findings are consistent with the ones obtained in the other data collection tools. For both types, the movements of the objects were the most preferable ones while those of the subjects were rated to be the worst. Considering the fact that the original position of the subjects is more distant to the verb compared to that of the objects, these findings appear to be foreseeable.

CONCLUSION

In the present study, movements of subjects, objects and adjuncts out of the ECM clauses to the background position of their own clauses and to that of the main clause were examined. In this regard, both Type 1 and Type 2 ECM constructions were taken into account.

In the scrambling to the background position of the matrix clause, all target structures were processed and rated to be worse than the control sentences, which cannot be explained through the PIC. The study puts forward that the problem stems from divergent sources for different structures. In this regard, there exists a reverse asymmetry between subjects and objects with respect to Type 1 and Type 2 ECM clauses. That is, the extractions of subjects out of Type 2 ECM clauses are rated and processed better than those of Type 1 clauses. In contrast, the scrambling of the objects sets forth better results for Type 1 constructions. With regard to subjects, the reason for this situation should be the existence of the person-number markers on the embedded verb in Type 1 clauses. The agreement markers on the embedded clause make such constructions similar to the finite complement clauses in Turkish. In such constructions, the background position of the main verb seems to be specified for the subjects of the main clauses and the scrambling of the lower subject to this node creates Distinctness effects.

In turn to objects, the existence of the person-number marking on the embedded clause sets forth better results. Since the subject verb agreement is more deficient in Type 2 constructions, the movement of the object seems to make the embedded clause more ill-formed. On the other hand, the agreement markers on the verb preserve the unity of the embedded clause and the scrambling of the object to the matrix clause becomes less problematic. As for adjuncts, their scrambling to background position yields ungrammaticality for both types. Since these embedded clauses are defective, the adjuncts which originate within them seem to be regarded to be main clause adjuncts when they move to the background position of the matrix verb.

With regard to scrambling to the background position of the embedded clause, all target structures got poor ratings and processing times compared to the control sentences. No matter the scrambling constituent is a subject, object or adjunct, the movement results in ungrammaticality. These results are in line with the assertion that ECM clauses have defective CPs which lack the u[background] feature to attract the constituents containing its interpretable counterpart. Due to this deficiency, it is impossible to background anything in such clauses.

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