THE SECOND LANGUAGE ACQUISITION OF INFLECTIONAL MORPHOLOGY IN TURKISH

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The Second Language Acquisition of Inflectional Morphology in Turkish

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DECLARATION OF ORIGINALITY

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ABSTRACT

The Second Language Acquisition of Inflectional Morphology in Turkish

This study investigates the acquisition of nominal and verbal morphology in second language (L2) Turkish. Five Case markers (i.e. Accusative, Locative, Ablative, Genitive and Dative) in the nominal domain and five Tense/Aspect/Modality (TAM) markers (i.e., *-(I)yor*, *-A/Ir*, *-(y)AcAK*, *-DI* and *-mIş*) in the verbal domain are examined. Based on the written data from 46 English-speaking learners of Turkish, (in)correct uses of the morphemes are analyzed. Three research questions are explored: i) do learners who have the time/opportunity to monitor their written output still demonstrate difficulty with accessing target morphemes; (if so) ii) are nominal and verbal markers subject to differential variability? iii) is there an accuracy order within Case and TAM markers? The results have revealed high accuracy rates in both nominal and verbal domains. Nevertheless, Case morphology has been found to be used less variably than TAM markers. Furthermore, a difficulty hierarchy can be implicated as the Accusative marker and Aspectual *–mIş* morpheme appeared to be the two most erroneously supplied suffixes. The errors mostly involve omissions in the use of Case suffixes; and substitutions in the use of TAM markers, which implies morphological problems even in the written modality. Nevertheless, systematic and accurate use in the data suggests that the L2 morphological system (richness and regularity) facilitates the extent of native-like ultimate attainment of morphemes. An accuracy hierarchy found amongst the nominal and verbal morphology implies the selective nature of variability and calls for further research examining its potential linguistic causes.

ÖZET

Türkçe'nin Yabancı Dil Olarak Öğreniminde Çekim Eklerinin Edinimi

Bu çalışmada, Türkçenin yabancı dil olarak öğreniminde isim ve eylem çekim eklerinin edinimi araştırılmıştır. İncelenen adsıl çekim ekleri Belirtme *–(y)I*, Bulunma *-DA*, Ayrılma*–DA*n, Tamlayan *-(n)In/-Im* ve Yönelme *–(y)A* Durum ekleri; eylemcil çekim ekleri ise Zaman / Görünüş / Kip ekleri olan *-(I)yor*, *-A/Ir*, *-(y)AcAK*, *-DI* ve *-mIş* ekleridir. Ana dili İngilizce olup Türkçeyi yabancı dil olarak öğrenen 46 katılımcıdan toplanan yazılı veriler, bahsedilen eklerin doğru ve yanlış kullanımları belirlenerek analiz edilmiştir. Üç araştırma sorusu incelenmiştir: i) Türkçe öğrenenler, yazılı üretimlerini monitör edecek zaman bulduklarında bile hedef eklere ulaşmakta zorluk yaşamakta mıdır? (öyle ise); ii) adsıl ve eylemcil çekim eklerindeki değişken kullanım farklılık göstermekte midir?; iii) Durum ve Zaman-Görünüş-Kip eklerinde bir doğru kullanım sıralaması gözlemlenebilir mi? Bulgular, incelenen tüm eklerin yüksek oranda doğru kullanıldığını göstermektedir. Ancak, Durum eklerinde daha az oranda değişken kullanım gözlemlenmiştir. *–(y)I* Durum ve *–mIş* Görünüş eklerinin en yüksek oranda hatalı kullanılan iki ek olması ekler arasında bir zorluk derecelendirmesine ve biçimbirimlerin kullanımındaki değişkenlikte bir şeçicilik olduğuna işaret etmektedir. Durum eklerindeki hataların çoğu eki atma şeklinde iken, Zaman-Görünüş-Kip eklerindeki hatalar daha çok yanlış ek seçme şeklindedir. Bulgular, yazılı üretimde de çekim eklerinin kullanımında hatalar olabildiğini göstermektedir. Ancak verilerdeki sistemli ve yüksek oranda doğru kullanım, ikinci dilin biçimbilimsel sisteminin (zengin ve düzenli biçimbirimsel dizil), ikinci dildeki ekleri edinmeyi kolaylaştırdığına işaret etmektedir. İlerideki çalışmalarda bunun dilbilimsel nedenleri araştırmaya yönelik olmalıdır.

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All the remaining errors belong to me.

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ABBREVIATIONS

ABL	Ablative
ACC	Accusative
AOR	Aorist
CAUS	Causative
COND	Conditional marker
CONJ	Conjunction/Connective
COM	Comitative
COP	Copula
COPOSS	Compound possessive
DAT	Dative
DER	Derivational suffix
EV	Evidential tense
FUT	Future
GEN	Genitive
GM	Generalizing modality
IMP	Imperative
INT	Interrogative
LOC	Locative
NOM	Nominative
NEG	Negation
PAST	Participle
PASS	Passive
PAST	Past tense marker

PCOP	Past copula
PERF	Perfect
PF	Perfective
PL	Plural
POSS	Possessive
PRES	Present tense marker
PROG	Progressive
PRON	Pronomalizer (-ki)
SG	Singular
SUB	Subordinator
VN	Verbal noun maker

CHAPTER 1

INTRODUCTION

The optional/variable use of morphology has long been debated in the field of second language (L2) acquisition. It has been observed that learners show optionality in their suppliance of L2 morphology regardless of their first language (L1), target L2 and the length of L2 exposure (Gürel, 2000; Haznedar, 1997, 2006; Ionin & Wexler, 2002; Lardiere, 1998a, b; Montrul, 2016; Prévost & White, 2003). Studies have revealed that even end-state L2 learners with high levels of proficiency seem to show variability in their use of morphology, especially inflectional morphology (Lardiere, 1998a, b). They have been found to either omit the target morpheme or substitute it with a non-target one. Previous work on the issue of morphological variability has generated two lines of research; one has attempted to explain these findings by relating syntax and morphology in the L2 and the other line of research has focused merely on the staged development in the acquisition of L2 morphemes. The former has mainly dealt with the question of whether the observed optionality may imply the absence of syntactic categories and features in the grammars of L2 speakers (see Clahsen, 1988; Eubank, 1993/1994; Vainikka & Young-Scholten, 1994 as well as Haznedar, 1997; Haznedar & Schwartz, 1997; Lardiere, 2000, 2009; Prévost & White, 2000 for different views on the acquisition of morphology and its implication for syntactic development). Although much research has been carried out in order to test the predictions of different views on the acquisition of L2 morphology, recent research seems to point to the disassociation between syntax and morphology (Gürel, 2000; Haznedar, 2006; Kaili, Çeltek, & Papadopoulou, 2016; Papadopoulou et al., 2010), supporting the proposal that the observed variability in the domain of

morphology is due to an online mapping problem between abstract syntactic representations and their morphological realizations in spontaneous production (Lardiere, 2000, 2009). As will be discussed in the subsequent chapters, this view is generally referred to as the Missing Surface Inflection Hypothesis (MSIH) (Haznedar, 1997; Haznedar & Schwartz, 1997; Lardiere, 2000, 2009; Prévost & White, 2000) and predicts variability mostly in oral production of inflectional morphology in the L2 (Goad, White, & Steele, 2003).

The second line of research on L2 morphology has focused merely on the acquisition of discrete morphemes exploring whether there is an invariable order in the acquisition of inflectional morphemes by L2 learners with different L1 backgrounds. Starting with Brown's (1973) morpheme acquisition order study in child L1 English, much research has been conducted both in the L1 and L2 (e.g., De Villiers & De Villiers, 1973; Dulay & Burt, 1974a, 1974b). The target language in many of these studies were English. For example, in a pioneering work, Dulay and Burt (1974b) reported on the spoken data of L1 Chinese- and Spanish-speaking learners of L2 English, and argued for a developmental order for the morphemes that they investigated. Although Dulay and Burt have been criticized for suggesting an acquisition order based on the accuracy order, their study is still of great importance considering that it was the first study to suggest a definite order in which morphemes in L2 English are acquired (for a review, see Long & Sato, 1984; Luk & Shirai, 2009). Following Dulay and Burt, many researchers have endeavored to identify a developmental order for the acquisition of morphology in various L2s. In one of such studies, Turkish was the target L2. In this study, Altunkol and Balcı (2013) examined the written production data of beginner and intermediate level L2 Turkish learners with several L1s such as Persian, Arabic and French; and analyzed the use of four

Case markers, the Plural marker *-lAr* as well as the Possessive marker *–(s)I*. Researchers suggested an accuracy order for the investigated morphemes for both proficiency groups, according to which Plural is the most consistently and appropriately used morpheme whereas Accusative is the most erroneously supplied one.

The current study on L2 Turkish also aims to explore whether there is an accuracy/difficulty order for inflectional morphemes. Five Case and five Tense/Aspect/Modality (TAM) markers are investigated. Specifically, the target morphology involves Case markers (i.e., Accusative, Locative, Ablative, Genitive and Dative), and the TAM markers (*-(I)yor, -A/Ir, -(y)AcAK, -DI* and *-mIş*). The primary goal of the study is to find out whether there is a potential dissociation between the use of nominal and verbal morphemes (a result unforeseen by the MSIH) in terms of the extent of variability in L2 Turkish, a language with rich and highly regular inflectional paradigms. Secondly, the study explores whether the issue of variability commonly observed in oral production also extends to written production where L2 learners find more time to monitor their outputs. In case of variability, the study also explores which morphemes within each domain are more susceptible to optionality. The types of errors that are committed by the participants (omission or substitution) are also of great importance for the study considering that they may give insight into the views on the relation between syntax and morphology since the MSIH postulates that when inflection is present, it is appropriate. This means that no substitution error is expected in the data. In addition to these, the current study is unique in the sense that it is the first to compare the performance of L2 learners of Turkish in both nominal and verbal domains. The current theoretical views attribute the optional suppliance of morphology to the performance problems

observed mainly in spoken production. However, they do not predict any selectivity in the vulnerability observed. In other words, no difference is predicted between nominal and verbal inflection. Nor do they predict variability in written productions of L2 learners in which learners have more time/opportunity to monitor their outputs. Therefore, this study will contribute to the previous research by presenting written data from L2 learners of a highly inflecting agglutinative language with regular morphology and suggesting an accuracy order for the target morphemes.

The organization of this thesis is as follows: Chapter 2 will summarize major linguistic theories as well as previous research on the phenomenon of variability/optionality in the use of L1 and L2 morphology. Studies on L1 and L2 acquisition of morphology in Turkish will also be discussed in this chapter. In Chapter 3, the target inflectional morphemes investigated in the current study will be described with their most common functions. Chapter 4 will detail the methodology of the study including participants, data collection procedure and the data coding methods. Chapter 5 will present the results including both accuracy scores and an error analysis in both nominal and verbal domains. The last chapter will discuss the findings of the current study with reference to previous research and linguistic views on L2 morphology. Possible reasons for the observed findings will also be suggested. Finally, pedagogical implications of the findings as well as limitations and suggestions for further research will be presented.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

It has long been observed that adult learners of a second language (L2), even at the end-state grammar, generally fail to perform native-like particularly in the use of inflectional morphology (Lardiere, 1998a; Long, 1990). The problems surface mostly in the form of omission of morphemes in obligatory contexts. In the theoretical L2 acquisition literature, this phenomenon is often referred to as 'optionality' or 'variability' in the domain of inflectional morphology. A number of linguistic accounts have been proposed in order to explain the optionality observed in L2 learners' grammars. Although it is not the aim of the current study to test these widely-discussed views, it will still be relevant to present them as the background within the scope of the current study that discusses the use of L2 morphology. The overview below includes a discussion of these linguistic accounts and also the research studies investigating the phenomenon of morphological variability (or optionality) and its syntactic implications in such languages as English, French and lastly in Turkish.

2.2 Theoretical background

The phenomenon of 'morphological variability/optionality' has been much discussed in the L2 literature both from the perspective of L2 morphology per se and from the perspective of what it implies for the acquisition of L2 syntax. In other words, by looking at L2 acquisition of morphology, researchers attempt to identify not only the types and aspects of morphology that are difficult to acquire but also the

relationship between the acquisition of morphology and syntactic categories. As discussed below, the focus of this thesis is the former. However, it is important to note that much theoretical discussion has taken place to examine the morphology-syntax relation in the context of L2 acquisition. As mentioned below, some researchers have argued that the observed variability in the grammars of L2 learners is evidence for a deficit in syntactic representations (Eubank & Grace, 1998; Meisel, 1997; Vainikka & Young-Scholten, 1994), while others have claimed that it is merely a surface morphology phenomenon, which is caused by the problem in mapping fully specified abstract syntax to surface morphological forms (e.g. Haznedar & Schwartz, 1997; Lardiere, 1998a; Prévost & White, 2000; White, 2003). The theoretical discussion on the acquisition of L2 morphology has roots in first language (L1) acquisition work. Therefore, it will be relevant to first look at the major theoretical assumptions proposed for L1 acquisition of morphology.

2.2.1 Linguistic views on L1 acquisition of morphology

Work on child L1 acquisition of morphology in relation to syntax has generated two important views, namely the *Weak Continuity Hypothesis* (e.g., Vainikka, 1993) and the *Strong Continuity Hypothesis* (Harris & Wexler, 1996). The *Weak Continuity Hypothesis* is based upon the idea that functional categories develop gradually with exposure to input whereas only lexical categories are initially present in child L1 grammar (Vainikka & Young-Scholten, 1994). This view assumes that children start their L1 grammar with lexical categories but not with functional categories. Accordingly, the child first has a Verb Phrase (VP) projection, which later reaches up to the Inflectional Phrase (IP), and then, on the basis of positive evidence, to the Complementizer Phrase (CP)-based representations, implying that the acquisition of

functional categories is incremental and the presence of a higher level projection entails a previously acquired lower level one. Crucially, in this view, the projection of functional categories is linked to the acquisition of relevant morphological forms. The opponent view, namely the *Strong Continuity Hypothesis*, on the other hand, claims that functional categories are present from the beginning and there is "strong continuity" from child L1 to adult L1 development (Harris & Wexler, 1996).

As discussed in the following section, these proposals have also been considered for L2 acquisition, leading to different accounts as to why L2 morphology appears to be one of the most difficult domains of grammar and what implications morphological problems have for L2 syntax.

2.2.2 Linguistic views on L2 acquisition of morphology

The *Weak* and *Strong Continuity Hypotheses* which were originally proposed for child L1 acquisition were further extended to L2 acquisition as the *Minimal Trees Hypothesis* (Vainikka, 1993) and the *Full Transfer/Full Access Hypothesis* (Schwartz & Sprouse, 1996), respectively.

The *Minimal Trees Hypothesis* argues that in L2 acquisition, only lexical categories are transferred from the L1, hence available at the initial L2 state, but other functional categories are acquired gradually in a sequence based on the learner's analysis of input. In this view, it is argued that as in L1 acquisition, the L2 acquisition of morphological paradigms acts as a trigger to move from one stage to another in the interlanguage grammar. As the morphological paradigms are acquired, associated functional categories gradually emerge (Vainikka & Young-Scholten, 1994). In line with these assumptions, some researchers clearly link morphology to syntax and argue that variability observed in the domain of inflectional morphology

can be taken as supporting evidence for a permanent representational deficit in L2 grammars as a whole or just locally. In this vein, Clahsen (1988), Bley-Vroman (1990) and Meisel (1997), for instance, maintain that L2 grammar is fundamentally different from the L1. Eubank (1993/1994) makes similar claims in his *Valueless Feature Hypothesis* regarding a local impairment in functional categories by asserting that the features of functional categories are permanently inert, which results in variable realization not only in morphology but also in verb placement.

In contrast, *the Full Transfer/Full Access Hypothesis* asserts that L2 learners have full access to functional as well as lexical categories, which are available even at the early interlanguage stages (Schwartz & Sprouse, 1996). Furthermore, L1 transfer, in this view, is not considered counter-evidence for the availability of Universal Grammar (UG)-given functional projections in adult L2 acquisition. In other words, the transfer of L1 parameters into the L2 does not conflict with the idea that UG, as a constraining mechanism, also governs L2 grammars. Crucially, in this view, the acquisition of L2 morphology is not assumed to be a prerequisite for L2 syntax. Accordingly, the absence of L2 morphology (i.e., L2 learners' variable suppliance of morphemes) is not taken as an indicator of the unavailability of the associated functional projections. In line with this view, some researchers have suggested that morphology and syntax are disassociated; it is not possible to infer, on the basis of the lack of inflectional morphology, that syntactic representations are also lacking. Similarly, the presence of morphology cannot be supporting evidence for the availability of the related syntactic projections. With this way of thinking, Haznedar and Schwartz (1997) propose the *Missing Surface Inflection Hypothesis* (MSIH), which suggests that the variable use of inflectional morphology does not necessarily entail impairment in the associated functional categories or features.

Problems in the use of L2 morphology possibly occur during the surface level realization of the morphological forms. According to the MSIH, learners face what Lardiere (2000) calls as 'the mapping problem' between abstract syntactic categories or features and their morphological realizations in spontaneous production. Crucially, the mapping problem should occur mostly in online production of target morphemes when L2 learners are time-pressed to access the correct morpheme and do not have the time to monitor their output.

In an earlier study supporting the MSIH view, Haznedar (1997) reports on the production data from a 4;3-year-old Turkish child learning English as an L2 (see also the subsequent work of Haznedar, 2001; Haznedar & Schwartz, 1997). The use of copula and auxiliary *be*, overt and null subjects, and finite and nonfinite verb forms is observed in the child's English over a period of 18 months. The results show that nominative overt subjects are used with a high rate of accuracy despite variability in the use of verbal inflection. Based on these findings, it is suggested that the child L2 English learner knows that English is a non-pro-drop language as evidenced by the participant's syntactic knowledge regarding English although his use of inflection remains variable suggesting that syntax and morphology are independent (Haznedar, 2001; Haznedar & Schwartz, 1997).

In another study, Ionin and Wexler (2002) examine the use of finite and nonfinite verb forms as well as tense and agreement on the suppletive and affixal forms in the production data from 20 Russian L1-speaking children acquiring English as an L2. Although learners are found to make omission errors, the rate of substitution errors is quite low. Moreover, no null subjects and no verb placement errors are observed in the data as predicted by the authors. The results also show that speakers perform better at suppletive than affixal form. Ionin and Wexler resort to

UG to explain this result and indicate that raising verbs (*-be*) is UG-based while affixal lowering (3rd singular-*s*) is language-specific, and thus requires more time to master.

Prévost and White (2000) analyze the spontaneous production data of adult L2 French and L2 German speakers, and look at the use of finite versus nonfinite verb forms. They state that learners use finite forms only in finite contexts whereas they prefer nonfinite forms not only in nonfinite contexts but also in finite ones, suggesting that nonfinite is the default form, and there is no indication of impairment in the syntactic representations. They further account for their findings based on the Distributed Morphology Model, following Lardiere's (1998a, b) view of a form-function mapping problem in the L2. Prévost and White (2000) suggest that the preference for nonfinite forms in finite contexts when the speakers are in doubt is due to the fact that those forms are underspecified, and thus it is easier to match their feature specifications with lexical items (Halle & Marantz, 1993).

Lardiere (1998a, b) discusses the morphology-syntax interaction in a longitudinal data of an end-state L1-Chinese speaker of L2 English. Lardiere's participant, Patty is found to show variability in the use of inflection (past tense, 3rd person singular *–s*), but she demonstrates no difficulties with the use of pronominal Case marking and thematic verb-raising in English in spontaneous production. Given the results of the studies, Lardiere (1998 a, b) concludes that morphology and syntax have independent developmental courses, and the problem with the realization of morphology may be due to incorrect mapping between these two dissociated systems. Considering the results of her studies including the one with Patty, Lardiere (2008, 2009) claims that learning of an L2 is not based upon parameter resetting, but it is realized by the reassembly of features from L1.

In a similar longitudinal study involving an end-state L2 learner, White (2003) analyzes the spoken production data from an L1-Turkish-speaking learner of L2 English. White examines the use of both verbal morphology (e.g., tense and agreement) and nominal morphology (e.g., definite and indefinite articles). The findings indicate that the learner can provide nominative overt subjects with 100% accuracy, and supply verbal inflection at a high rate despite some omission errors, but shows persistent variability in the nominal domain. On the basis of these findings, White (2003) suggests that variability in the suppliance of nominal inflection does not necessarily imply a syntactic impairment considering the high rate of correct suppliance of syntactic properties such as the overt nominative subjects. Furthermore, to account for the observed difference between the verbal and the nominal domains in her data, White resorts to the *Prosodic Transfer Hypothesis* (Goad & White, 2004; Goad, White & Steele, 2003), according to which variability observed in the domain of inflectional morphology in the L2 is due to transfer of L1 prosodic features to the L2 grammars. This is believed to cause difficulty in supplying certain functional morphemes in spontaneous production. Accordingly, White (2003) states that "[i]n the case of Turkish, no functional material is permitted at the left edge of a prosodic word, in contrast to English. If SD's [the subject of the study] end-state English grammar was constrained by L1 prosodic structure, this would explain why suppliance of determiners is significantly depressed (because they cannot be represented prosodically) and yet there is considerable accuracy in terms of features like definiteness (because determiners and their features are represented morpho-syntactically)" (p.139).

In sum, the findings summarized above seem to support the MSIH, which posits that the problems encountered in the domain of morphology cannot be

attributed to a deficit in the representation of functional categories, but rather shows a surface level morphological realization problem. It is also important to note that the Prosodic Transfer Hypothesis provides a phonological account of what the MSIH assumes.

In some recent accounts, inflectional morphology is considered to be the 'bottleneck' of L2 acquisition (Slabakova, 2009, 2014). This view argues that once inflection is acquired, other domains of grammar such as syntax and semantics will improve smoothly in L2 acquisition. Following Reinhart's (2006) grammar model, Slabakova (2014) holds that syntactic operations as well as semantics are universal; yet, the problem for L2 learners lies in the 'functional lexicon' where all the parameterization process, which refers to the mapping interpretable and uninterpretable features onto their morphological realizations, takes place. Therefore, in her *Bottleneck Hypothesis*, Slabakova also agrees that overt morphology and underlying syntactic projections are dissociated (Haznedar & Schwartz, 1997; Lardiere, 1998a, b; White, 2003).

To sum up, the variable use of inflectional morphology in the L2 has long been associated with the absence of underlying functional projections; yet this view has been challenged in subsequent years. In most recent views (e.g., the MSIH, the Prosodic Transfer Hypothesis), variable suppliance of target morphology is attributed to performance (i.e., processing) problems emerging mostly in spontaneous oral production. Accordingly, no major variability problems are expected in offline (i.e., untimed) tasks that do not require real-time language production. Crucially, no difference between different types of inflections is predicted with respect to the extent of variability that might occur.

In this context, the thesis examines written production data from learners of L2 Turkish and compares the use of nominal and verbal inflection. Compared to oral production, production of morphology in the written modality is less time-constrained as learners have more time to monitor their outputs. This should be a more effective tool for them to display their metalinguistic knowledge on L2 morphology. Thus, form-function mapping problems should occur less (if any) in written tasks. Furthermore, in principle there should be no difference between different types of inflectional morphemes. Before we detail the study that tests these predictions, it will be relevant to look at available data from L2 acquisition of Turkish inflectional morphemes.

The next section presents a brief summary of the research studies examining these issues first in the L1 and then the L2.

2.3 The acquisition of inflectional morphology in Turkish

As an agglutinative language, Turkish has a rich and an easily segmentable morphological system in the sense that each affix represents its own meaning unit and has clear-cut boundaries. Thanks to the nature of its morphological system, studying the L1 and L2 acquisition of Turkish inflectional system might help researchers gain an insight into the acquisitional process of the morphological paradigm, and contribute to the most recent debates in the field. The following sections discuss the studies investigating the L1 and L2 acquisition of verbal and nominal morphology in Turkish, respectively.

2.3.1 L1 Turkish studies

It has been reported that Turkish children acquire nominal as well as most of the verbal morphology by the age of 2, and start using inflectional morphology productively within approximately 15 months in an error-free fashion, which is quite opposite of what has been observed in the data of monolingual children speaking other languages such as English (Aksu-Koç & Slobin, 1985; Ekmekçi, 1979). Since morphemes are regular and stressed (hence salient), Turkish-speaking children can acquire inflectional morphology at an early age (Aksu-Koç & Slobin, 1985). Below, studies on the acquisition of verbal and nominal morphology in L1 Turkish are briefly summarized, respectively.

2.3.1.1 Studies on verbal morphology

It has been documented that Turkish monolingual children go through a developmental stage in their acquisition of verbal morphology (Aksu, 1978; Aksu-Koç & Slobin, 1985; Aksu-Koç & Ketrez, 2003). As shown in Aksu (1978), a longitudinal study lasting for six months with three children who were around 21 months old at the beginning of the study, children start the acquisition process by first distinguishing between the past of direct evidence *-DI* and the Progressive marker *-(I)yor*. Aksu assumes that children initially make a distinction based on the aspectual meanings of the indicated morphemes as ‘completion’ and ‘duration’. Another aspectual marker emerging later than the Past and Progressive markers is the use of Perfective/Evidential/Inferential marker *-mIş* with its reference to states in past. Different modalities of *-mIş* such as perfective, evidential as well as inferential are acquired far later than when the child makes a distinction between *-DI* and *-(I)yor* in terms of tense as past and present. Aksu-Koç and Slobin (1985) suggest that the

late appearance of *-mIş* and productive use of its different modalities may be due to the cognitive load required to analyze the context (i.e., different roles of the speakers, and nature of source of evidence such as direct or indirect) and to determine whether it is an obligatory context for the suffix.

In another study, based on the data from a monolingual Turkish child named Deniz over a period of six months (age range: 1;3-2;0), Aksu-Koç and Ketrez (2003) present evidence for the two-stage developmental pattern of the child's verbal morphology. In the first stage named as 'pre-morphology', the researchers claim that the child only produces lexical units with no productive use of inflections. In the subsequent stage, which is called 'proto-morphology', however, it is reported that the child starts inflecting verbs for time and aspect to a large extent. An increase in the number of word types inflected as well as in the appropriate agreement markers is also observed. As for the gradual nature of the morphological development observed in Deniz's data, Aksu-Koç and Ketrez posit that Deniz might have made use of a learner strategy such as applying a rule to a new set of words, which takes time at the beginning, but becomes easier as the number of the words to which the rule is applied increases.

Overall, the studies mentioned above have shown that verbal inflections can be mastered and productively used by a monolingual Turkish child by the age of 2 although a gradual development is also observed, which is the case in the nominal domain as well, as presented below.

2.3.1.2 Studies on nominal morphology

As regards L1 acquisition of the nominal paradigm by Turkish-speaking children, it is suggested that children master number (Plural) and Possessive (*–(s)I*) markers as

well as Case morphemes (Ablative *–DA*n, Locative *–DA*, Accusative *–(y)I*, Genitive *(n)In/-Im* and Dative *–(y)A*) before the age of 2. As in the verbal paradigm, monolingual Turkish children rarely produce erroneous forms, which is thought to be a result of regularity and saliency of the suffixes in Turkish, as already mentioned above (Aksu-Koç & Slobin, 1985).

Ketrez and Aksu-Koç (2009) report on a longitudinal study with the same participant as mentioned above, Deniz, who was around 1;5 years old at the time of data collection. Presenting a detailed analysis of the number, Possessive and Case markers in Deniz's speech, the researchers examine the developmental process of the nominal paradigm in three phases, namely 'pre-morphology', 'proto-morphology' and 'morphology proper'. The child is shown not to inflect nouns in a productive manner until the 'proto-morphology' stage (between the ages 1;6 and 1;9) where a sharp increase in not only the number of morphemes used but also the types and the number of words that they are attached to is observed. In the following stage, the child is claimed to be mostly stabilized and produce error-free suffixation. Ketrez and Aksu-Koç also highlight that their findings contradict with those of the studies investigating adult L2 acquisition of Turkish since nominal and verbal morphology emerge simultaneously; and the Accusative marker is used productively and appropriately before all the other inflectional suffixes in Turkish child speech. However, it should also be noted that in other studies on L1 acquisition of nominal morphology in Turkish (e.g., Ketrez, 2004), Accusative Case has been found to remain problematic until later years.

There are also studies examining the relation between word order and Case morphology in L1 Turkish since they are related in the sense that the SOV (subject-object-verb) order in Turkish can be scrambled so long as appropriate Case

morphemes are attached to the words (Sebüktekin, 1974). Following this, Ekmekçi (1979) presents findings from her study with a Turkish speaking child, Didem, in which the child relies not on word order, but inflectional morphemes in understanding and producing sentences.

In summary, the studies mentioned above demonstrate that children learning Turkish can not only produce inflections accurately and productively but also make use of them effectively to interpret the syntactic relations in sentences in Turkish as young as 15 months old, a stage in which children learning inflectionally-limited languages such as English still struggle with simple early word combinations with no inflections.

2.3.2 L2 Turkish studies

The L2 acquisition of inflections in Turkish has not attracted scholarly attention until recently as it is evident from a small number of research studies conducted (e.g., Altunkol & Balcı, 2013; Efeoğlu, 2018; see Gürel, 2016 and contributions therein). Below, available data from a limited number of studies on the L2 acquisition of verbal and nominal paradigms in Turkish is discussed.

2.3.2.1 Studies on verbal morphology

In a number of research studies investigating the acquisition of the verbal as well as the nominal paradigm by adult L2 learners (Akdoğan, 1993; Haznedar, 2006; Papadopoulou et al., 2010), it has been found that the learners show less variability in the verbal domain.

A recent study conducted by Kaili, Çeltek and Papadopoulou (2016), on the other hand, demonstrates that L2 learners may encounter difficulties in the domain of

verbal morphology as well. In the study, the researchers investigate the L2 acquisition of Tense, Aspect and Modality (TAM) markers in Turkish with the aim of identifying the most problematic TAM marker(s) for L2 learners. The participants are 15 (12 females and 3 males) adult L1 Greek speakers divided into two groups as intermediate and advanced, and the tasks are fill-in-the-blank test and an elicited oral imitation task. The morphemes under investigation are *-(I)yor* (marker of Progressive Aspect and Present Tense), *-DI* (Past Tense and Perfective Aspect marker), *-(y)AcAK* (marker of Future), *-A/Ir* (marker of Imperfective/Habitual Aspect and Generic meaning) and *-mIş* (Past Tense and Perfective Aspect marker). The findings indicate that the suffixes *-A/Ir* and *–mIş* are the ones which cause problems for L2 learners most whereas *-DI* and *-(y)AcAK* are used in a native-like manner. The findings are explained based on the multifunctional nature of the problematic morphemes. Specifically, the problems associated with the acquisition of morphemes, *A/Ir* and *–mIş* are attributed to the fact that these suffixes also denote modal functions such as epistemic or deontic modality as well as some extended pragmatic uses. Given that modality is realized lexically rather than morphologically in L1 Greek of the participants, cross-linguistic difference between L1 and L2 in realizing these markers is also considered to be a possible cause leading to this difficulty.

In another recent study, Montrul (2016) investigates whether the L1s of English, Spanish and Japanese learners of Turkish constrain the acquisition of transitive (causative) and intransitive (inchoative) morphology in Turkish. More specifically, using a picture judgment task, Montrul tests the predictions of Lardiere's Feature Reassembly Hypothesis (Lardiere, 2009), which claims that reassembly of abstract features that already exist in the L1 into their morphological realizations in L2 is crucial in L2 acquisition, and that failure to do so may result in

surface level morphological errors. Accordingly, Montrul predicts that morphological errors observed in the data would be due to influence of the phonological spell-outs of the investigated abstract features in the L1s of the participants when they are realized in a different way than in L2 Turkish. Confirming the predictions of Montrul, the findings show that L1 influence is observed where L1 and L2 realize the phonological spell-outs of causative and inchoative morphology differently.

In short, although it has been widely held that nominal morphology causes numerous problems for L2 learners, this study shows that the acquisition of verbal morphology may also pose difficulties for the learners.

2.3.2.2 Studies on nominal morphology

A number of studies on the L2 acquisition of the nominal morphology in Turkish has revealed that most of the difficulties faced by L2 learners have been observed in the acquisition of Case markers whereas other nominal inflections such as Plural marker seem to be acquired more smoothly (e.g., Akdoğan, 1993; Altunkol & Balcı, 2013; Antonova-Ünlü, 2015; Gürel, 2000; Haznedar, 2006; Papadopoulou et al., 2010).

In their descriptive study, for instance, Altunkol and Balcı (2013) present data on the L2 acquisition of the four Case markers (Accusative, Locative, Dative and Ablative), Plural marker as well as Possessive marker in Turkish. The participants of the study are 32 beginner and 13 intermediate students attending an intensive Turkish as a foreign language course at the time of testing. Two possible confounding variables regarding the characteristics of the participants are also noted by Altunkol and Balcı: (i) the participants were at different ages at the time of data collection, and (ii) they had different L1s. Analyzing the four different writing tasks, the researchers

then suggest an accuracy order considering the correct use of the markers for each proficiency level. As can be seen below, they order the suffixes from the most to the least correctly used at both proficiency levels (Altunkol & Balcı, 2013, p.14):

Beginner level: plural > possessive > ablative > locative > dative > accusative

Intermediate level: plural > ablative > locative > possessive > dative > accusative

As it is clear from the patterns given above, the researchers assert that Plural marking is acquired early in L2 Turkish whereas the Accusative Case marker seems to be problematic even at higher proficiency levels as it was also found in previous research studies (Akdoğan, 1993; Güven, 2007). Yet, Altunkol and Balcı add that the aforementioned confounding variables, namely different ages and different L1s of the participants, may have biased their results.

In a more structured study, Gürel (2000) examines the relation between the Case morphemes and the word order restrictions in Turkish only by L1 English speakers. By using grammaticality judgment (GJT) as well as picture-description tasks, Gürel aims to test whether the observed variability in the domain of inflectional morphology is due to a representational deficit or a surface level realization problem. The results show that the learners commit more omission than substitution errors, and they are also sensitive to word order constraints in Turkish although they show variable use of Case morphology, and especially the Accusative marker. Gürel concludes that L2 learners have abstract knowledge about the Case morphology and its interaction with word order in Turkish (2000).

Based on the spontaneous production data collected from an adult L2 learner of Turkish with English as L1, Haznedar (2006) reports that the speaker has almost no difficulty with the production of agreement and tense morphology but displays

low performance in the use of Case markers. Considering that the learner shows knowledge of word order restrictions in Turkish by using the Case markers correctly in the scrambled sentences, Haznedar reaches the conclusion that the problems that the learner faces are due to surface level realization of Case.

Papadopolou et al. (2010) also report on the acquisition of Case morphology in relation to word order restrictions in Turkish by Greek speakers divided into three proficiency levels as beginner, low- and high-intermediates by using such tasks as cloze test, sentence picture matching and GJ tasks. The findings reveal better performance in verbal domain compared to nominal morphology. In addition, performance was better in canonical (SOV) sentences than non-canonical word order (OSV) constructions. Furthermore, L2 learners, irrespective of their proficiency levels, demonstrated partial sensitivity to Case morphology and word order restrictions. A possible explanation suggested for these findings is L1 effects emerging due to differences between Turkish and Greek with respect to word order paradigm. The authors further conclude that the findings support MSIH.

Overall, the studies on the L2 acquisition of nominal morphology in Turkish indicate that the acquisition of the Case suffixes poses great difficulty for learners. Particularly, the Accusative marker seems to be the most problematic Case marker for L2 learners of Turkish. Nevertheless, the studies show that the learners have abstract functional categories in their L2 grammars, and that they have some knowledge of word order restrictions as well.

2.4 Summary and conclusion

This chapter has summarized the major theoretical issues regarding the variable use of inflectional morphology and its relation with the representation of the associated

functional categories. Child L1 data has first initiated the discussions on the availability of the functional projections and the use of inflectional morphemes, which has later been addressed in the L2 acquisition literature as well. On the basis of variable use of inflectional morphology in L2 learners' production, two major opposing views have been put forward, namely representational and performance deficit views. While in the former view, the absence of overt morphology in L2 learners' production is taken as a supporting evidence for an impairment in the related functional projections (Bley-Vroman, 1990; Eubank & Grace, 1998; Meisel, 1997; Vainikka & Young-Scholten, 1994), a dissociation between morphology and syntax is suggested in the latter view (Haznedar & Schwartz, 1997; Lardiere, 1998a, b; White, 2003). These views have been tested mostly in L2 English. Nevertheless, data from an inflectionally rich language is also necessary in this context. Although it is not the principal aim of the study, the current study reports on the use of inflectional morphology (both verbal and nominal domain) in L2 Turkish, an agglutinating language with regular morphology. The study will enable us to identify whether the widespread observation that adult L2 morphology is inevitably characterized by omission or faulty use of target morphemes even in a language such as Turkish, with highly systematic and regular paradigms. The data presented in the current study will not be relevant so much for the decades of discussion between morphology and syntax but be still be revealing as to whether there are certain types of morphemes that pose much more difficulty than others or potential differences between the use of nominal and verbal inflections even in a context that does not require online production of L2 morphemes, a finding that is not predicted by any of the linguistic models of L2 morphology presented above.

In the next section, morphological properties of the nominal and verbal paradigms in Turkish will be presented with a detailed description of the morphemes under investigation.

CHAPTER 3

MOPHOLOGICAL PROPERTIES OF TURKISH

3.1 Introduction

As an agglutinative language, Turkish is rich in inflectional morphology, whose primary function is to show the relations among constituents in a given sentence. Considering the nominal paradigm, Turkish marks Case, number and possession whereas person suffixes as well as Tense-Aspect-Modality (TAM) markers are attached to the verbs (Göksel & Kerslake, 2005; Ketrez, 2012; Kornfilt, 1997). As the L2 acquisition of the Case and TAM markers are examined in the current study, only those suffixes are discussed below.

3.2 The Case system in Turkish

Turkish has six Case suffixes, namely Nominative, Locative, Ablative, Genitive, Dative and Accusative (Kornfilt, 1997). Nominative Case, used for sentential subjects, is not overtly marked unlike other Case suffixes. In the following sections, the Ablative, Locative, Dative, Genitive and Accusative Case markers will be described in detail.

3.2.1 Ablative Case *–DAn*

The Ablative Case suffix in Turkish has a number of functions; the first one is that it is used as an adverbial indicating departure, source, cause, or material which is denoted with the use of ‘off’, ‘from’, ‘of’ or ‘out of’ in English (Ketrez, 2012; Kornfilt, 1997). The examples below show the use of *–DAn* as an adverbial indicating departure, cause and material respectively:

(1)

a. Uçak Antalya'-dan kalk-acak.
The plane-NOM Antalya-ABL take off-FUT.3SG
'The plane will take off from Antalya.'

b. Ahmet susuzluk-tan bayıl-dı.
Ahmet-NOM thirst-ABL faint-PAST.3SG
'Ahmet fainted out of thirst.'

c. Bu yelek çelik-ten yap-ıl-dı.
This vest steel-ABL make-PASS-PAST.3SG
'This vest was made of steel.'

The Ablative suffix can also be used as the oblique object of such verbs as *kork-* 'be afraid (of)', *hoşlan-* 'like' and *bık-* 'fed up (with)', and as the complement of such adjectives as *memnun* 'pleased (with)' (Göksel & Kerslake, 2005) as shown in (2a) and (2b) respectively. In this use of the Ablative Case, it marks the source of the experience while the subject is an experiencer (Ketrez, 2012, p. 32). It can also be the complement of bare postpositions such as *önce* 'before' and *sonra* 'after' as seen in (2c).

(2)

a. Ayla yılan-lar-dan nefret ed-er.
Ayla snake-PL-ABL hate-AOR.3SG
'Ayla hates snakes.'

b. Şu anki iş-in-den memnun.
Current job-POSS-ABL pleased
'She is pleased with her current job.'

c. Ders-ten sonra buluş-tu-lar.

Class-ABL after meet-PAST.3PL

'They met after the class.'

Another use of *–DAn* is as a modifier when it is used in comparative structures as exemplified in (3) (Ketrez, 2012). Lastly, the Ablative suffix can also express 'partitive meaning' as seen in (4) (Ketrez, 2012; Kornfilt, 1997):

(3) Ali Ayşe'-den daha çok kazan-ıyor.

Ali-NOM Ayşe-ABL more earn-PRES.3SG

'Ali earns more than Ayşe.'

(4) Çocuk çikolata-dan bir ısırık al-dı.

Child-NOM chocolate-ABL a bite take-PAST.3SG

'The child took a bite of the chocolate.'

3.2.2 Locative Case *–DA*

The Locative suffix is used to express location in time or place as can be seen in the examples (5a) and (5b). In English, these meanings can be expressed with the use of 'in', 'on' and 'at' (Ketrez, 2012).

(5)

a. Atatürk 1881'-de doğ-du.

Atatürk-NOM 1881-LOC be born-PAST.3SG

'Atatürk was born in 1881.'

b. İstanbul'-da 20 milyon insan yaş-ıyor.

Istanbul-LOC 20 million person live-PROG.3SG

'20 million people are living in Istanbul.'

In the former example (5a), the use of *–DA* indicates location in time, which is a given year, while it is used to express spatial location in the latter example (5b).

The Locative Case marker is also obligatory when it is used as the oblique object of such verbs as *karar kıl-* 'decide (on)', *iyi/başarılı/kötü/başarısız ol-* 'be good/successful/bad/unsuccessful (at)', *ısrarcı ol-* 'be insistent (on)', or *ısrar et-* 'insist (on)' as shown below (Göksel & Kerslake, 2005):

(6) Mavi elbise-de karar kıl-dı.
Blue dress-LOC decide-PAST.3SG
'She decided on the blue dress.'

3.2.3 Dative Case *-(y)A*

The Dative suffix in Turkish marks the indirect object of ditransitive verbs. As an indirect object marker, it can denote such meanings as the recipient or beneficiary and the target or destination of an action as exemplified below respectively (Altunkol & Balcı, 2013; Göksel & Kerslake, 2005; Kornfilt, 1997):

(7)

a. Ahmet Zeynep-e bir yüzük satın al-dı.
Ahmet-NOM Zeynep-DAT a ring buy-PAST.3SG
'Ahmet bought a ring to Zeynep.'

b. Kargo-yu ev-e gönder-dik.
Parcel-ACC home-DAT send-PAST.1PL
'We sent the parcel to the house.'

As the Locative and Ablative suffixes, the Dative Case marker can also be used as the oblique object of certain verbs such as *sevin-* 'be happy (about)', *güven-* 'trust', and as the complement of such adjectives as *uygun* 'suitable' and

postpositions like *göre* ‘according to’ or *kadar* ‘until’. The example sentences as to the indicated uses of the Dative marker are given below:

(8)

a.	Ahmet’-e	uygun	bir	gömlek	ar-ıyor-um.
	Ahmet-DAT	suitable	a	shirt	look for-PROG.1SG
	‘I am looking for a shirt (that is) suitable for Ahmet.’				
b.	Uzman-lar-a	göre,	sıcaklık-lar		art-acak.
	Expert-PL-DAT	according,	temperature-PL		rise-FUT.3PL
	‘According to experts, temperatures will rise.’				

The Dative Case marker can also be used in causative structures and marks the agent of the transitive verb which is causativized. In English, this use of the Dative marker corresponds to the derived direct object ‘somebody’ in such structures as ‘let/make somebody do something’ (Ketrez, 2012; Kornfilt, 1997).

(9)	Mehmet	proje-yi	Melih’e	yap-tır-dı.
	Mehmet-NOM	project-ACC	Melih’-DAT	yap-CAUS-PAST.3SG
	‘Mehmet made Ali do the project.’			

3.2.4 Genitive Case *-(n)In/-Im*

The Genitive Case marker is commonly used in Genitive-Possessive constructions, and it denotes the meaning of the possessor to the noun phrase (NP) that it attaches to (Ketrez, 2012; Kornfilt, 1997). It is also the only suffix that has different forms depending on the person features of the NP that it is attached to (Kornfilt, 1997, p. 302): The first, second and third person is expressed with *–(I)m*, *-(I)n* and *–n(I)n* respectively in Genitive marking. An example of the indicated use of the Genitive suffix in a Genitive-Possessive structure is given below:

(10) Sibel'-in cüzdan-ı çok pahalı.

Sibel-GEN wallet-POSS.3SG very expensive

'Sibel's wallet is very expensive.'

Genitive-Possessive constructions may also denote partitive meaning in which the Genitive suffix marks the preceding nominal that expresses the whole whereas the Possessive marker attaches to the head noun that expresses a part of the entity (Göksel & Kerslake, 2005).

(11) Yapboz-un parça-lar-ı kaybol-du.

Puzzle-GEN.3SG piece-PL-ACC get-PAST.3PL lost

'The pieces of the puzzle got lost.'

The Genitive Case marker can also be used in predicate nominals as exemplified below (Ketrez, 2012):

(12) Bu saat Merve'nin.

This watch-NOM Merve-GEN

'This watch is Merve's.

The subjects of certain subordinate clauses can also be marked by the Genitive suffix as seen in (13) (Kornfilt, 1997):

(13) [O-nun parti-yi iptal et-tiğ-in]i unut-tu-m.

[O-GEN party-ACC cancel-PART-POSS.3SG]-ACC forget-PAST.1SG

'I forgot [she cancelled the party].'

3.2.5 Accusative Case *-(y)I*

The last Case suffix that is tested in the current study is the Accusative Case suffix whose main function is to mark the direct object (DO). However, the Accusative

marker is the only Case suffix that can be non-obligatory at times since not all DOs obligatorily take the Accusative marker, which is partially determined by pragmatic issues (Bolgün, 2005; Göksel & Kerslake, 2005). With the aim of forming a general rule to determine when to mark DOs with the Accusative suffix, various views have been suggested (e.g., Dede, 1986; Enç, 1991; Gencan, 1992, 2001; Lewis, 1967). While some have differentiated obligatory and non-obligatory contexts of the Accusative marker based on 'definiteness' which means that the referred entity is known to both the speaker and the hearer (e.g., Gencan, 1992, 2001), others have claimed that the overt use of the Accusative marker depends on the 'specificity' which implies that the entity which is referred to is known by the speaker as displayed in (14) (Enç, 1991). There are also scholars who argue that whether a DO is marked by the Accusative marker relates to the 'individuation' of the DO which means that the DO is distinguished as a unique entity from all the other NPs around it as in (15) (Bolgün, 2005; p. 62).

(14)

a. Seda elbise beğen-di.
   Seda-NOM dress like-PAST.3SG.
   'Seda liked (any) dresses.'

b. Seda elbise-yi beğen-di.
   Seda-NOM dress-ACC like-PAST.3SG
   'Seda liked the dress.'

c. Seda bir elbise-yi beğen-di.
   Seda-NOM a dress-ACC like-PAST.3SG
   'Seda liked a (certain) dress.'

In the examples given above, the ‘definiteness’ account can explain the difference between (14a) and (14b) by claiming that ‘dress’ is not definite in the first sentence, and thus does not bear the Accusative marker, whereas it is definite and known to both hearer and speaker in (14b), which results in the attachment of the Accusative marker to the noun ‘elbise’. Nevertheless, this view cannot account for why the example sentence in (14c) is marked with the Accusative suffix considering that the use of ‘bir’ (one) implies that the hearer does not know which dress Seda liked (Bolgün, 2005). In her ‘specificity’ account, on the other hand, Enç (1991) argues that NPs are non-specific unless they are overtly marked with the Accusative suffix. Accordingly, the DO in the examples (14b) and (14c) bears Accusative; therefore, it is obligatorily interpreted as specific in both sentences whereas it is non-specific in (14a), and thus the Accusative suffix is not present. Claiming that the ‘specificity’ account cannot explain all the cases where a DO is marked with the Accusative marker as can be seen in (15), Bolgün (2005) argues for the ‘individuation’ of the DO from all other surrounding nouns. According to Bolgün, the word *şeyi* in (15) bears Accusative marker although it is hard to say that the speaker refers to a specific entity by using Accusative in the example. Bolgün also states that ‘individuation’ is scalar ranging from high to low. Accordingly, in the example sentence (14a), the DO can be claimed not to bear the Accusative marker considering that its individuation level is low, which is the followed by (14c), and finally (14b) in which the DO has the highest level of individuation.

(15) Bir insan bir şey-i bil-iyor-sa, o-ndan asla vazgeç-mez. (Bolgün, 2005, p. 20)

A person-NOM one thing-ACC know-PRES.3SG-COND, that-ABL never concede-NEG.AOR.3SG

‘If a person knows something, he/she never concedes it.’

The other cases where the Accusative marker is obligatory is when the object is a proper name (16) or a pronoun (17) and when it is marked with a Possessive marker *–(s)I* as exemplified in (18) (Ketrez, 2012; Serin & Taylan, 1997).

(16) Ercan Elif'-i beğen-iyor.
Ercan-NOM Elif-ACC like-PRES.3SG
'Ercan likes Elif.'

(17) Herkes o-nu ar-ıyor.
Everybody-NOM she-ACC look-PROG.3SG for
'Everybody is looking for her.'

(18) Anahtar-ım-ı kaybet-ti-m.
Key-POSS.1SG-ACC lose-PAST.1SG
'I lost my key.'

If the object is modified with the use of *–ki* (19a) or by a relative clause (19b), the use of the Accusative marker is obligatory (Ketrez, 2012).

(19)

a. Bank-ta otur-an adam-ı gör-üyor mu-sun?
Bench-LOC sit-PART man-ACC see-PROG-INT.2SG
'Do you see the man who is sitting on the bench?'

b. Bank-ta-ki adam-ı gör-üyor mu-sun?
Bench-LOC-PRON man-ACC see-PROG-INT.2SG
'Do you see the man (who is sitting) on the bench?'

Other contexts that require Accusative Case marker are when the object follows a demonstrative such as *o*/*şu* 'that' or *bu* 'this' as in (20), and when the object is preceded by *bütün* 'all', *her* 'every' or *bazı* 'some' as exemplified in (21) below (Serin & Taylan, 1997):

(20) O kalem-i ist-iyor-um.

That pencil-ACC want-PRES.1SG

'I want that pencil.'

(21) Bütün soru-lar-ı cevapla-dı-m.

All question-PL-ACC answer-PAST.1SG

'I answered all the questions.'

Lastly, when the direct object is a question word such as *hangisi* 'which', *kim(ler)* 'who', *nere(ler)* 'where', the use of Accusative marker is required. An example of this use is given below:

(22) İstanbul'-a kim-ler-i davet et-ti-niz?

Istanbul-DAT who-PL-ACC invite-PAST.2PL

'Who did you invite to Istanbul?'

In Turkish, the overt use of the Accusative Case marker is highly related with the word order restrictions as well. The basic word order in Turkish is SOV (Erguvanlı, 1984) although scrambling is also allowed under certain restrictions which are determined by the definiteness and the specificity features of the NPs (Enç, 1991). According to Enç (1991), non-specific NPs must be adjacent to the verb as illustrated in the examples (25) and (26). Moreover, the use of *bir* (one) is thought to denote indefiniteness to the noun that follows it (Zimmer & Taylan, 1994), which can be seen in (24) and (25) (Gürel, 2000, p. 4).

(23) Definite/specific:

a. Ayla bebeğ-i öp-tü.

Ayla-NOM baby-ACC kiss-PAST.3SG

'Ayla kissed the baby.'

b. Bebeğ-i Ayla öp-tü.

Baby-ACC Ayla-NOM kiss-PAST.3SG

‘(It is) Ayla (who) kissed the baby.’

(24) Indefinite/specific:

a. Ayla bir bebeğ-i öp-tü.

Ayla-NOM a baby-ACC kiss-PAST.3SG

‘Ayla kissed a (certain) baby.’

b. Bir bebeğ-i Ayla öp-tü.

A baby-ACC Ayla-NOM kiss-PAST.3SG

‘(It is) Ayla (who) kissed a (certain) baby.’

(25) Indefinite/non-specific:

a. Ayla bir bebek öp-tü.

Ayla-NOM a baby kiss-PAST.3SG

‘Ayla kissed a baby.’

b. *Bir bebek Ayla öp-tü.

A baby Ayla-NOM kiss-PAST.3SG

‘Ayla kissed a baby.’

(26) Indefinite/non-specific (generic meaning):

a. Ayla bebek öp-tü.

Ayla-NOM baby kiss-PAST.3SG

‘Ayla kissed babies.’

b. *Bebek Ayla öp-tü.

Baby Ayla-NOM kiss-PAST.3SG

‘Ayla kissed babies.’

Word order variations as exemplified above depend on not only syntactic but also pragmatic factors such as topicality and so does the overt use the Accusative marker (Bolgün, 2005).

3.3 The Tense/Aspect/Modality (TAM) markers in Turkish

3.3.1 Introduction

Under the category of Tense/Aspect/Modality (TAM) markers, most of the suffixes have double or triple functions in Turkish (Ketrez, 2012). A tense marker can simultaneously function as an aspect or a modality (mood) marker (Göksel & Kerslake, 2005; Kornfilt, 1997). Nevertheless, it is still possible to categorize them considering their individual functions under each of the three categories, namely tense, aspect and mood.

With respect to the category of 'tense' in Turkish, it is argued that there are two basic tenses: past tense marked with the suffixes, *-DI* and *-mIş,* and non-past tense marked with the so-called Present Tense marker *–(I)yor* and the Future Tense marker *-(y)AcAK* (Göksel & Kerslake, 2005). Moreover, defined as "… different ways of viewing the internal temporal constituency of a situation" (Comrie, 1978, p. 3), 'aspects' in Turkish are divided into three primary categories that involve 'perfect' which means present relevance of a past situation, 'perfective' that refers to the events seen from the outside as completed, and 'imperfective' which denotes incomplete/ongoing event aspects (Comrie, 1978; Kornfilt, 1997). 'Modality', on the other hand, is described as expressing the status of the conveyed knowledge (e.g., whether it is known, heard, deduced etc.) rather than implying a time reference (Göksel & Kerslake, 2005).

Below, the TAM markers investigated in the current study, namely *-A/Ir* (Imperfective/Habitual Aspect and Generic Meaning marker or also called Aorist), *-DI* (Past tense and Perfective Aspect marker), *-mIş* (Past Tense and Perfective Aspect marker), *-(I)yor* (Imperfective Aspect and Present Tense marker) and *-(y)AcAK* (Future marker) are discussed with reference to all of their functions.

3.3.2 Habitual aspect and generic meaning / Aorist marker *-A/Ir*

Known as the Aorist, the suffix *-A/Ir* with its negative form *–mAz* commonly marks the habitual aspect and generic meaning, which imply characteristic features of a certain group or class and the whole group, respectively (Göksel & Kerslake, 2005, p. 423). However, it also denotes a number of modalities (Kornfilt, 1997). Due to various modalities it expresses as well as the flexibility of its use to refer to actions in past and future, the Aorist is known to be a 'timeless tense' (Kaili & Çeltek, 2011; Menges, 1995; Yavaş, 1979). Below, its uses as the markers of habitual aspect and generic meaning are given respectively:

(27) Habitual aspect:

Her sabah saç-ı-nı yık-ar.

Every morning hair-POSS.3SG-ACC wash-AOR.3SG

'She washes her hair every morning.'

(28) Generic meaning:

Köpek havla-r.

Dog-NOM bark-AOR.3SG

'Dogs/a dog bark(s).'

Different modalities that the Aorist marks are the consequence of a hypothetical situation, an assumption that generally denotes future reference as well

as such speaker-oriented modalities as willingness, wishes and permissions (Yavaş, 1979). When expressing an assumption, the Aorist is often accompanied by such adverbs as *belki* 'perhaps', *kesinlikle* 'definitely' or *herhalde* 'probably', 'presumably', 'I expect', whose use demonstrates the confidence of the speaker in the assumption that she/he has made (Göksel & Kerslake, 2005, p. 298). Furthermore, expressions like *inşallah* 'hopefully' and *umarım* 'I hope' may be added to the sentence when the Aorist is used to express wishes. Examples of the indicated modalities are presented below:

(29)

a. Consequence of a hypothetical situation:

Çok	ye-me.	Kilo	al-ır-sın.
Much	eat-NEG.IMP.2SG.	Weight	gain-AOR.2SG

'Don't eat much. You will gain weight (if you do).'

b. Assumption:

Ahmet	konser-e	git-ti.	Geç	gel-ir	herhalde.
Ahmet-NOM	concert-DAT	go-PAST.3SG.	Late	come-AOR.3SG	probably

'Ahmet went to a concert. He probably comes back late tonight.'

c. Willingness:

Çizim-de	iyi-yim.	Ben	yap-ar-ım.
Drawing-LOC	good-COP.1SG.	I-NOM	do-AOR.1SG

'I am good at drawing. I (will) do it.'

d. Wishes:

Um-ar-ım	Kanada'-da	mutlu	ol-ur-sun.
Hope-AOR.1SG	Kanada-LOC	happy	be-AOR.2SG

'Hopefully (I hope) you will be happy in Canada.'

e. Permissions:

Çorba-yı bit-ir, tatlı yer-sin.

Soup-ACC finish-IMP.2SG, dessert eat-AOR.2SG

'Finish (eating) your soup and you will eat dessert.'

Lastly, the Aorist can be used to express polite requests or offers in interrogative sentences (Ketrez, 2012):

(30) Ban-a bir iyilik yap-ar-mı-sın?

I-DAT a favor do-AOR-INT.2SG

'Can you do me a favor?'

3.3.3 Past tense and perfective aspect marker *-DI*

Being one of the markers of past tense as well as perfective aspect, the suffix *–DI* can also express perfect aspect when the present result of a past action is emphasized. When it is used as a marker of perfective aspect, the event is seen as completed (Kornfilt, 1997):

(31)

a. Past tense and perfective aspect marker

Berrin-e saat al-dı dün.

Berrin-DAT watch buy-PAST.3S yesterday

'He bought a watch for his girlfriend.'

b. Perfect aspect marker

Sevgili-si-ne saat aldı dün (ama hala o-na ver-me-di).

'He bought a watch for his girlfriend (but he has not given it to her yet).'

Recent past and experiential perfect can also be marked by *–DI* as exemplified below (Kaili, Çeltek, & Papadopoulou, 2016):

(32)

a. Ödev-im-i henüz bitir-di-m.

Homework-POSS.1SG-ACC just finish-PAST.1SG

'I have just finished my homework.'

b. Hayat-ım-da hiç sushi ye-me-di-m.

Life-POSS.1SG-LOC never sushi eat-NEG-PERF.1SG

'I have never eaten sushi in my life.'

When used with such verbs as *acık-* 'get hungry', *susa-* 'get thirsty' *or yorul-* 'get tired, the perfective marker *–DI* expresses entry into a state (Göksel & Kerslake, 2005, p. 292):

(33) Acık-tı-m.

Get hungry-PF.1SG

'I'm hungry.'

3.3.4 Evidential marker *–mIş*

Apart from *–DI*, *–mIş* also marks past tense and perfective aspect since the event that is referred to is a completed one. The difference in their meanings, however, is that the event is uttered based on indirect evidence when *–mIş* is used whereas *–DI* is obligatory when there is direct evidence related to the event (Kornfilt, 1997).

(34) Anne-m sen-i ara-mış.

Mother-POSS.1SG you-ACC call-EV.3SG

'(Apparently), my mother called you.'

The suffix, *-mIş* also expresses inference that is made based on reasoning or previous knowledge as exemplified in (35) (Göksel & Kerslake, 2005). For the given

example, an appropriate context would be when a teacher comments on the homework of one of her students. Since the teacher has the evidence that the student is not capable of doing the homework in such a good way, she explicitly states that the student did not do the homework.

(35) Bu ödev-i sen yap-ma-mış-sın.
This homework-ACC you do-NEG-EV.2SG
'It is not you that did this homework.'

While reporting what has been heard or written to another person, the verb is marked by the Evidential marker as well (Ketrez, 2012; Kornfilt, 1997):

(36) Mehmet mezun ol-muş, Ali öyle de-di.
Mehmet-NOM graduate-EV.3SG, Ali-NOM so say-PAST.3SG
'Mehmet graduated, Ali said so.'

Other uses of *–mIş* are to express admiration about the actuality of the event (37) or scorn or irony on the part of the speaker (38). In addition, it is also used in traditional narratives which are generally told to children in Turkish (39) (Kaili, Çeltek, & Papadopoulou, 2016, p. 83):

(37) Ödül-ü ben kazan-mış-ım.
Prize-ACC I-NOM win-EV.1SG
'(I was not expecting that but) I won the prize.'

(38) (In a situation when the wife says that she did not add much salt to the meal, but actually did so, and her husband states this in an ironic way)
Gerçekten hiç tuz kat-ma-mış-sın.
Really no salt add-NEG-EV.2SG
'You really did not add any salt!'

(39) Nasreddin Hoca bir gün bir köy-e git-miş.

Nasreddin Hoca-NOM one day a village-DAT go-EV.3SG

'One day, Nasreddin Hoca went to a village.'

3.3.5 Present tense and imperfective aspect marker *–(I)yor*

One of the main functions of the TAM marker *–(I)yor* is to express present tense in Turkish as exemplified below (Göksel & Kerslake, 2005):

(40) Ali her gün iş-e bisiklet-le gid-iyor.

Ali-NOM every day work-DAT bicycle-COM go-PRES.3SG

'Ali is going to/goes to work by bicycle every day.'

The suffix *-(I)yor* is also used to mark imperfective aspect, which implies that the event or state mentioned is incomplete in the sense that it is either an ongoing event/state at a particular time reference or that it is habitual (recursive) (Göksel & Kerslake, 2005). The examples below illustrate the use of *-(I)yor* with states and events in reference to their progressive and habitual aspects respectively:

(41)

a. Progressive state:

Bugün yorgun görün-üyor-sun.

Today tired look-PROG.2SG

'You look tired today.'

b. Progressive event:

Şu an favori şarkı-m-ı söylü-yor.

Now favorite song-POSS.1SG-ACC sing-PROG.3SG

'Now, she is singing my favorite song.'

(42)

a. Habitual state:

Cevab-ı bil-iyor-um.

Answer-ACC know-PRES.1SG

‘I know the answer.’

b. Habitual event:

Her sabah süt iç-iyor-um.

Every morning milk drink-PRES.1SG

‘I drink milk every morning.’

It should be noted that although different uses of *-(I)yor* as tense and aspect marker are exemplified separately above, the suffix marks not only present tense but also the habitual aspect of an event in the example (40), which in turn shows the multifunctional nature of the TAM markers in Turkish.

The suffix *-(I)yor* can also mark the perfect aspect when it refers to an event that started in the past but still continues at the moment (Kornfilt, 1997). An example of such use is presented below:

(43) Beş yıldır bu şirket-te çalış-ıyor-um.

Five years-COP this company-LOC work-PERF.1SG

‘I have been working in this company for five years.’

Ingressive (beginning of a situation) as well as iterative (series of a repeated action) aspects can also be denoted by *-(I)yor* as exemplified in (44a) and (44b) respectively (Kaili, Çeltek, & Papadopoulou, 2016; Kornfilt, 1997). Another use of the imperfective aspect marker *-(I)yor* is when it denotes a future event that is scheduled as exemplified in (45) When *-(I)yor* is used with a future reference, it

shows the confidence of the speaker for the scheduled event in a way that the schedule will surely be followed (Kornfilt, 1997).

(44)

a. Ingressive aspect

Yollu-yor-um mesaj-ı.

Send-PROG.1SG message-ACC

'I am sending the message.'

(I am about to send the message)

b. Iterative aspect

Gülçin hapşır-ıyor.

Gülçin-NOM sneeze-PROG.3SG

'Gülçin is sneezing.'

(Gülçin keeps on sneezing.)

(45) Gelecek yıl Eylül'-de evlen-iyor-uz.

Next year September-LOC get married-PROG.1PL

'We are getting married in September next year.'

3.3.6 Marker of future *-(y)AcAK*

Although the suffixes *–(I)yor* and *-A/Ir* also denote future reference as mentioned above, the only explicit marker of future is *-(y)AcAK* (Göksel & Kerslake, 2005, p. 287). The difference between these suffixes in their future meaning is that the event is more definite when it is expressed by *–(I)yor* (Balcı, 2000). An example use of the Future marker is given in (46).

The suffix *–(y)AcAK* may also be used to express assumptions about which the speaker is confident either due to the prior knowledge or the possibility of immediate verification as exemplified in (47) below (Kornfilt, 1997).

(46) Maç-ı Beşiktaş kazan-acak.
Match-ACC Beşiktaş-NOM win-FUT.3SG
'Beşiktaş will win the match.'

(47) Kalem-i dün Aybüke kullan-dı. O-nda ol-acak.
Pen-ACC yesterday Aybüke-NOM use-PAST-3SG. She-LOC. be-FUT.3SG
'Aybüke used the pen yesterday. She must have it.'

3.4 Summary and conclusion

In this chapter, the Case system (Ablative *-DAn*, Locative *-DA*, Dative *–(y)A*, Genitive *-(n)In/-Im* and Accusative *–(y)I*) as well as TAM markers (Aorist *-A/Ir*, Past Tense and Perfective Aspect marker *–DI*, Evidential marker *–mIş*, Present Tense and Imperfective Aspect marker *–(I)yor* as well as Future Tense marker *-(y)AcAK)* in Turkish have been discussed with the descriptions of their most common functions. As mentioned earlier, most of these suffixes are multifunctional in nature, which in turn may make it difficult to acquire them. Nevertheless, all the functions presented here are commonly used in daily life by native speakers in Turkish. In the current study, however, the use of each suffix in different semantic/syntactic contexts is merged now that the data do not contain enough instances of use in all the different contexts in which a particular morpheme is used. For a summary of all the functions of the morphemes mentioned above (see Appendix A). In the following chapter, the methodology of the current study on the L2 acquisition of the indicated suffixes is presented, which is followed by the analysis of the data.

CHAPTER 4

METHODOLOGY

4.1 Introduction

The purpose of this chapter is to report on the current study investigating the L2 acquisition of nominal morphology (Case suffixes) and verbal morphology (TAM markers) in Turkish by native speakers of English. The sections below are organized as follows: research questions are introduced in the following section with predictions as to each research question. This will be followed by detailed descriptions of the participants and data collection procedure in the study. In the last section of the chapter, the analysis of data is presented.

4.2 Research questions

Based on the previous research, our research questions and predictions are as follows:

1. Is there a difficulty hierarchy in the acquisition of Turkish Case morphemes as revealed by L2 learners' accuracy scores in the written production data? If so, how does this hierarchy look like in adult L2 learners of Turkish?
2. Do L2 learners of Turkish show variability in their use of Case morphology? If so, does the variability (if any) manifest itself in the form of omission or substitution?
3. Which Case morpheme(s) are more susceptible to variable use? What could be the potential reasons for this?
4. Is there a difficulty hierarchy in the acquisition of Turkish TAM markers as revealed by L2 learners' written production data? If so, how does this hierarchy look like in adult L2 learners of Turkish?

5. Do L2 learners of Turkish show variability in their use of TAM markers? If so, does the variability (if any) manifest itself in the form of omission or substitution?
6. Which TAM marker(s) are more susceptible to variable use? What could be the potential reasons for this?
7. Is there a difference between the variability (if any) observed in the use of nominal (Case morphology) and verbal morphology (TAM markers)?

As regards the acquisition hierarchy, it is predicted that a difficulty ranking/ order is relevant for Turkish Case suffixes as well as TAM markers. In other words, certain morphemes will be susceptible to variability more than others. As previous research has illustrated, although L2 learners use Case markers as well as TAM markers variably even at high proficiency levels, there is a common tendency to use certain morphemes such as Ablative (*–DAn*) as well as Locative (*-DA*) Case morphemes (e.g., Altunkol & Balcı, 2013) and Future Tense marker *–(y)AcAk* more accurately (less variably) than others such as the Accusative Case marker *–(y)I* as well as Past Tense and Perfective Aspect marker *–mIş* (Kaili, Çeltek, & Papadopolou, 2016).

It is also expected based on the previous research that variability will be observed in the form of omission more than substitution for both nominal and verbal groups (e.g., Gürel, 2000; Lardiere, 2007; Papadopolou et al., 2010). In other words, incorrect morpheme use is expected to involve omitting the suffix altogether. Thus, L2 learners of Turkish are predicted not to supply the morpheme at all rather than replace it with another morpheme.

Regarding the third and the sixth research questions, the Accusative Case marker and the verbal suffixes *-mIş* and *-A/Ir* are presumed to be more susceptible to variable use mainly due to their multifunctional nature. Lastly, more variability is

expected in the use of Case morphemes compared to that of TAM markers (Kaili, Çeltek, & Papadopoulou, 2016). All of the indicated predictions are based on previous research; however, a more detailed account of the findings will be presented in the last chapter.

4.3 Participants

The participants in this study are native English speakers, who attended a summer school on Turkish in Istanbul. Based on the results of a Placement Test, they were initially classified as either intermediate or advanced level learners. However, considering their self-ratings of Turkish and the views of their instructors in the summer school, they are described as 'having a good command of Turkish'. Moreover, all the participants were given a Cloze test which consisted of 25 slots with every 6th word deleted, and they were required to supply the appropriate vocabulary as well as the inflection (See Appendix B for the Cloze test). The performance of the participants on the indicated Cloze test in Turkish did not reveal a significant difference between groups ($p < .01$). Therefore, the findings of both groups were merged and analyzed accordingly.

The total number of participants in the study is 46 participants (23 females and 23 males) with the age range between 18 and 38 (mean age: 26). All of them are university students. The background questionnaire given at the beginning of the study revealed that the participants' first exposure to Turkish began either in the USA or in Turkey in formal contexts (mean age of first exposure is 21.4; range: 15-30). Therefore, they can all be regarded as late L2 learners who started learning Turkish after puberty.

The responses of the participants in the questionnaire also indicate that they used Turkish more frequently during their stay in Turkey (mean amount of L2 Turkish use: 20.4 hours a week (range: 2 hours-60 hours per week) compared to the extent to which they used the language when they were in the USA (mean amount of L2 Turkish use: 3.6 hours a week, range 1-14 hours). It should also be noted that despite increased frequency of Turkish use, the participants still continued to use English in their daily lives during their stay in Turkey when they contacted their family or in the social contexts.

With respect to their length of stay in Turkey, the mean length of stay was 1.68 years, range: 2 months-6 years.

4.4 Data collection and data coding

Data of the study comes from learners' essays. In order to collect data, the participants were asked to write on a given topic as a class activity or as weekly assignment. Inappropriate or offensive topics (e.g., topics discussing religious, political issues or sex-related topics) were avoided. Some of the sample topics that were assigned to the participants are given below:

1. Tell us what you did this summer in Turkey and what you want to do from now on.
2. Do you take vitamins regularly? Do you think vitamin supplement is necessary to be healthy?

The weekly assignments also included a diary written in Turkish. After collecting an average of eight writings from each participant (an average of 7000 sentences per each participant), the written products were then analyzed considering the obligatory contexts for each target morpheme. On the basis of this, accurate and

inaccurate uses of morphemes were counted. Among the erroneous forms, omissions and substitutions were then identified separately. An example of data coding is presented below:

(48)

a. Önce bavul-lar-ım-*Ø* topla-dı-m. (B. P., 2014)
First suitcase-PL-POSS.1SG-Ø pack-PAST.1SG
'First (I) packed my suitcase.

b. Mary çiftlik-*te* yerleş-ti. (B. M., 2014)
Mary-NOM farm-LOC settle-PAST.3SG
'Mary settled on the farm.'

In the first example (48a), the Accusative marker *-(y)I* seems to have been omitted at the end of the word *bavullarım* although its obligatory context would require it at word-final position (i.e., *bavullarımı*). On the other hand, in the second example (48b), the obligatory context would require the attachment of the Dative marker *-(y)A* to the word *çiftlik* (i.e., *çiftliğe).* However, as seen in the example, the Dative marker was replaced by the Locative marker *-DA*, which was further categorized as a substitution error in the current study.

It is important to note that due to the limited semantic contexts that the essay topics elicited, it was not possible to create all the relevant obligatory contexts that would elicit target morpheme use. In other words, all the functions of the target morphemes (as described in the previous chapter) could not be elicited in the data. Therefore, in the analysis, the (in)accurate use of each target morpheme was summed up disregarding different functions of a target morpheme. For example, the use of the Ablative Case as a form indicating departure, source or cause as well as its use as an oblique object of certain verbs are not analyzed separately.

CHAPTER 5

RESULTS

5.1 Introduction

In this section, the data is discussed under three main subheadings. First, an overall analysis of the data is presented with the results in the nominal and verbal domains, and their correlations with the Cloze test scores of the participants. In what follows, an error analysis for each Case morpheme and TAM marker under investigation is given in detail. For all the analyses, non-parametric tests are reported since normal distribution was not sustained for the majority of the variables, as revealed by Shapiro-Wilk test ($p < .001$). The Friedman test was employed to detect differences among repeated measures, and the Wilcoxon signed-rank test was conducted as the post-hoc analysis. Moreover, since essays obtained from the participants did not include instances of use in all the different contexts in which a particular morpheme is used, the use of each suffix in different semantic/syntactic contexts is merged.

5.2 Overall analysis

Overall results revealed high accuracy in all target morphemes except for the Accusative marker in the nominal domain and the evidential *–mIş* in the verbal domain.

5.2.1 Results of the nominal inflections

Table 1 below presents the number of obligatory contexts as well as the rate of correct suppliance for all of the five Case morphemes investigated in the current study, namely Ablative, Locative, Dative, Genitive and Accusative. As mentioned

earlier, the errors are further analyzed under two categories named as omission (zero inflection) and substitution (faulty inflection) errors.

Table 1. Accuracy Rates for Case Markers

Suffixes	No. of obligatory context	No. of correct suppliance	Mean accuracy percentage (%)
Locative (–DA)	2437	2285	93.7
Ablative (–DAn)	800	740	92.5
Dative (-(y)A)	2000	1757	87.8
Genitive (-(n)In/-Im)	1552	1352	87.1
Accusative (-(y)I)	1439	971	67.4
Total (Mean)	8228	7105	85.7

As displayed in Table 1, the mean accuracy percentages of all the Case markers are different. The Locative suffix appears to be the most correctly supplied suffix (M = 93.7, SD = 14.4). The Friedman test has also revealed a statistically significant difference among the target suffixes, $\chi 2(4) = 67.67$, $p < .001$. The results of the post-hoc analysis conducted with the Wilcoxon signed-rank test with a Bonferroni correction applied and the significance level set at $p < .010$ (i..e, .05/5) have illustrated that although the accuracy rate of the Locative suffix (Mdn = 94) is significantly higher than those of Dative (M = 87.8, Mdn = 89.5, z = -3.885, $p < .001$, r = -.57), Genitive (M = 87.1, Mdn = 89.5, z = -3.286, p = .001, r = -.48) and Accusative (M = 67.4, Mdn = 67, z = -5,171, $p < .001$, r = -.76), no significant difference was observed between the Locative and Ablative Case markers (M = 92.5, Mdn = 96, z = -0.324, p = .746). In addition, with a mean accuracy percentage of 67.4, Accusative was found to be the most erroneously supplied suffix among all (*p*

< .0001). Regarding the other suffixes, the Wilcoxon signed-rank test further revealed that Dative and Genitive (z = -.081, p = .935), and Ablative and Genitive did not differ significantly (z = -1.981 p = .048); yet, the difference between Ablative and Dative reached significance showing that the mean accuracy percentage of Ablative was higher than Dative (z = -2.749, p = .013, r = -.40).

Below, Figure 1 displays the mean accuracy percentages of the Case morphemes.

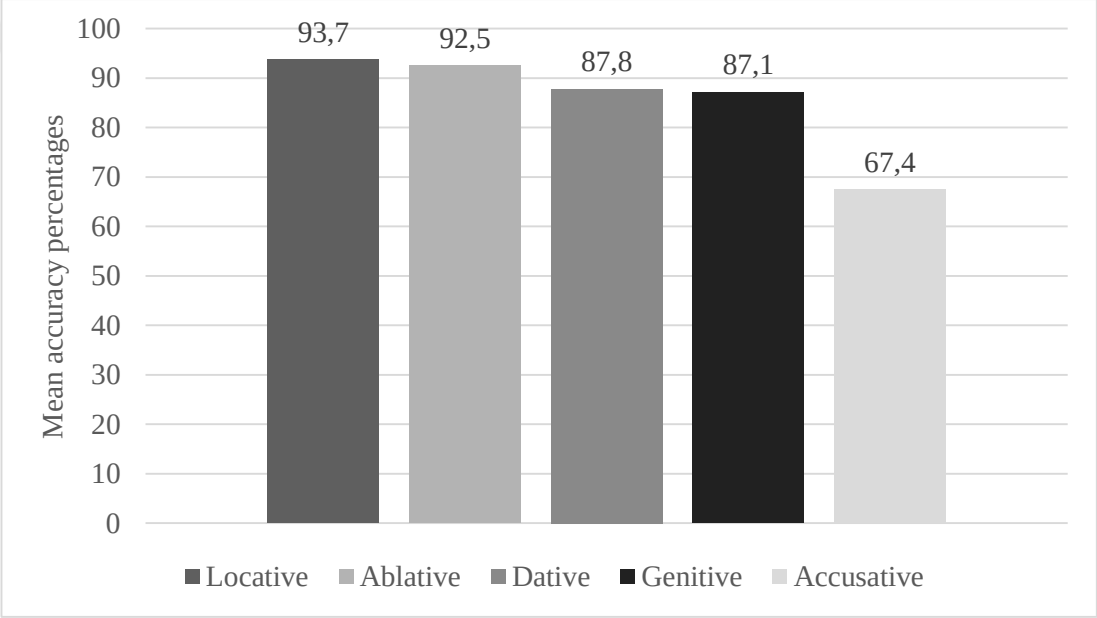

Figure 1. Mean accuracy percentages of Case markers

5.2.2 Results of the verbal inflections

The results regarding the verbal paradigm are presented in Table 2 below (see also Figure 2). The number of obligatory contexts, correct suppliance and mean accuracy percentages are shown for each TAM marker which are Aorist (*-A/Ir*), Past Tense and Perfective Aspect marker (*-DI*), Evidential marker (*-mIş*), Present Tense and Imperfective Aspect marker (*-(I)yor*) as well as the marker of Future (*-(y)AcAK*).

The Friedman test showed that the mean accuracy percentages of the TAM markers were significantly different as well, ($\chi 2(4) = 41.343$, $p < .001$). Although the Future marker (*-(y)AcAK*) seems to have the highest accuracy percentage, as seen in Table 2, the results of the Wilcoxon signed-rank test with a Bonferroni correction applied and the significance level set at $p < .010$ (i..e, .05/5) have shown a significant difference only between *-(y)AcAK* and *-mIş* ($z = -2,579$, $p = .010$, $r = -.38$).

Table 2. Accuracy Rates for TAM Markers

Suffixes	No. of obligatory contexts	No. of correct suppliance	Mean accuracy percentage (%)
Future (*-(y)AcAK*)	176	167	94.8
Past tense (*-DI*)	2232	2101	94.1
Present tense (*-(I)yor*)	1255	1021	81.3
Aorist (*-A/Ir*)	1144	896	78.3
Evidential (*-mIş*)	308	198	64.2
Total	5115	4383	85.6

Furthermore, *-mIş* was observed to be the least correctly supplied morpheme as it was evident from its comparisons with *-(I)yor* ($z = -4.046$, $p < .001$, $r = -.59$), *-A/Ir* ($z = -4.044$, $p < .001$, $r = -.59$) and *-(y)AcAK* ($z = -2.579$, $p = .010$, $r = -.38$). Further tests were carried out, and *-DI* ($M = 94.1$, $Mdn = 94.5$) was found to be significantly supplied more correctly in comparison to *-mIş* ($M = 64.2$, $Mdn = 56.5$, $z = -4.746$, $p < .001$, $r = -.69$), *-(I)yor* ($M = 81.35$, $Mdn = 82$, $z = -3.056$, $p = .002$, $r = -.45$) and *-A/Ir* ($M = 78.3$, $Mdn = 80.5$, $z = -3.204$, $p = .001$, $r = -.47$) while no significant difference was found between *-DI* and *-(y)AcAK* ($M = 94.8$, $Mdn = 100$, $z = -.580$, $p = .562$).

Besides, repeated measure comparisons between *-A/Ir, -(I)yor* as well as *-(y)AcAK* revealed no significant differences ($p > .01$).

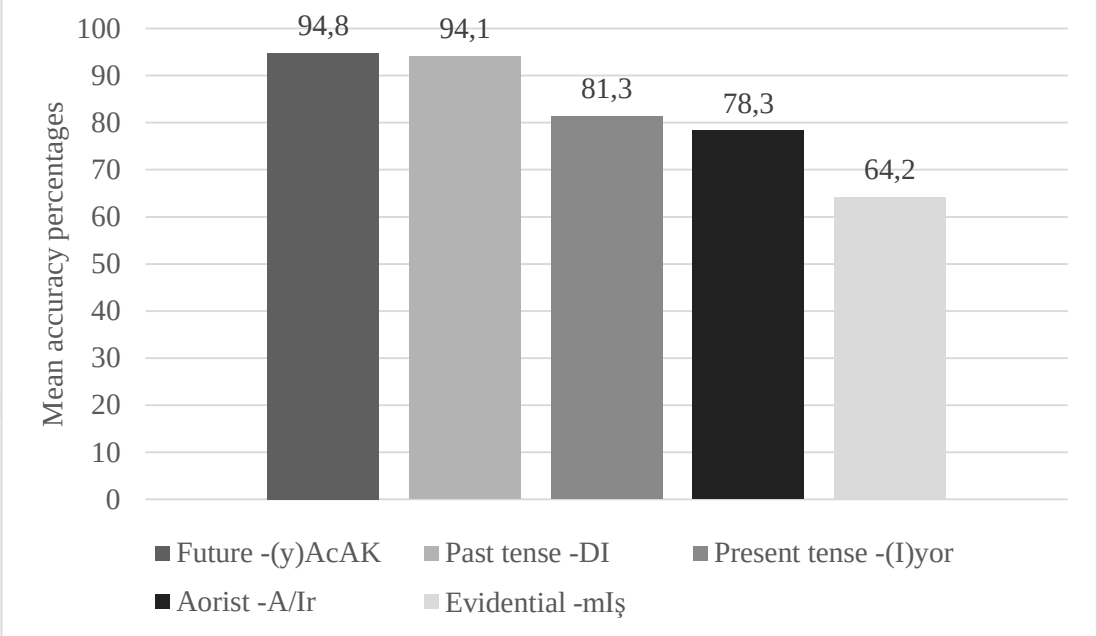

Figure 2. Mean accuracy percentages of TAM markers

When the nominal and verbal domains were compared, the obligatory contexts for the Case morphemes (n = 8228) were more than those of the TAM markers (n = 5115). The Case suffixes were used more correctly than the TAM markers, resulting in a significant difference between the mean accuracy percentages of the Case morphemes ($M = 86.3$, $Mdn = 86.6$) and the TAM markers ($M = 85.6$, $Mdn = 77.7$, $z = -2.934$, $p = .003$, $r = .43$). Moreover, the comparison of the error types showed that, in the nominal domain, omission errors exceeded substitution errors while the opposite pattern was the found in the verbal domain. In other words, TAM markers were mostly substituted than omitted. Furthermore, when the percentages of omission and substitution errors were compared between two domains, it was observed that the percentage of omission errors in the nominal

domain was higher than the one in the verbal domain (z = -4.893, p < .001, r = -.72). Yet, the percentage of substitution errors in the verbal domain seems to exceed the one in the nominal domain though it is not significant (p = .082). When the number of errors in both domains were merged and analyzed, no significant difference was revealed between the overall number of omission (n=1012) and substitution errors (n=843) (p = .061).

Lastly, correlation analyses comparing the use of each suffix in the nominal as well as verbal domains and the results of the Cloze test given to the participants at the beginning of the study were run, and a Bonferroni adjustment was applied with the significance level set at .008 (i.e., .05/6). Considering that the data does not meet the distributional assumptions, and it has a rather small sample size and a number of tied ranks, Kendall's tau-b coefficient was looked at to interpret the results. The analyses revealed no significant correlation between any of the Case suffixes and the Cloze test results (p > .008). Nevertheless, in the verbal domain, there was a significant positive correlation between the Cloze test scores and Aorist (r_T = .297, p = .005), suggesting that those with higher ranks of Cloze test scores were more likely to perform better in the use of Aorist.

5.3 Error analysis

Below, an overall analysis of errors for Case morphemes (Ablative, Locative, Dative, Genitive and Accusative) as well as TAM markers (*-A/Ir*, *-DI*, *-mIş*, *-(I)yor* and *-(y)AcAK*) are presented. The number of omission and substitution errors are compared, individual examples for each error type will be given, and the pattern of substitution is discussed.

5.3.1 Case morphemes

When the two error types, namely omission and substitution, were compared, the total number of omission errors (*Mdn* = 15) significantly exceeded substitution errors (*Mdn* = 8.5, z = -4.884, $p < .001$, r = -.72) in the use of Case morphology as can be seen in Table 3 below. However, when each Case marker was analyzed separately, it was revealed that no significant difference was found between the number of omission and substitution errors in the use of Locative (z = -.581, p = .561), Ablative (z = -1.439, p = .150) and Dative markers (z = -1.729, p = .084). The number of omission errors significantly outnumbered substitution errors only in the use of Genitive (z = -5.234, $p < .001$) and Accusative Case markers (z =-5.067, $p < .001$).

Table 3. Error Rates for Case Markers

Suffixes	No. of errors			Percentage of errors (%)		
	Omission	Substitution	Total	Omission	Substitution	Total
Locative (*–DA*)	82	70	152	3.4	2.9	6.3
Ablative (*–DAn*)	23	37	60	2.9	4.6	7.5
Dative (*-(y)A*)	107	136	243	5.4	6.8	12.2
Genitive (*-(n)In/-Im*)	174	26	200	11.2	1.7	12.9
Accusative (*-(y)I*)	367	101	468	25.6	7	32.6
Total (Mean)	753	370	1123	(9.2)	(4.5)	(13.7)

A detailed analysis of substitution errors for each Case morpheme was also conducted and summarized in Table 4 below. Accordingly, the most successfully supplied Case morpheme, which is the Locative marker, was substituted by the Ablative marker most (35.7 %) although the Genitive (22.9%) and Dative (20%) markers were often incorrectly preferred instead of the Locative Case suffix as well.

Substitution of the Locative marker by the Accusative Case marker (5.7%) and other inflectional as well as derivational suffixes (15.7 %), on the other hand, were significantly observed less ($p < .01$). Examples of omission (49) and substitution (50) errors as for the Locative Case marker are shown below:

(49) *[Türkiye'de-yken] inanılmaz sayı [yap-mak iste-diğ-im şey] var.
(T.B, 2013)
*[Turkey-LOC-SUB] a lot number [do-DER want-DER-POSS.1SG thing] there are
'There are numerous things that I want to do when I am in Turkey.'

(50) *Tarık [daha çok alkol kullan-ma-ya başla-yınca] araba kaza-sın-dan öl-dü.
(A.F., 2015)
*Tarık-NOM [much more alcohol use-DER-DAT begin-SUB] car accident-COPOSS-ABL die-PAST.3SG
'As Tarık began to drink more alcohol, he (eventually) died in a car accident.'

It can be seen in (49) that, Locative was omitted at the end of the word *sayı* as it should have been *sayıda*. Moreover, it was substituted by Ablative in (50) with the attachment of *–DAn* to the word *kaza*. Although *–DAn* in Turkish is obligatory in certain contexts when it is used with the verb *ölmek* 'to die', it is only required when the reason of dying is some kind of disease such as *veremden ölmek* 'to die of tuberculosis' or certain weather conditions as in *soğuktan ölmek* 'to die of cold'. Therefore, *kazasında* would be the correct form in the above example instead of *kazasından*.

In the context of the Ablative Case marker, the Locative Case suffix (51.4%) seems to be by far the most incorrectly preferred suffix. In other words, Locative Case was used instead of the Ablative marker. The other suffixes for which the

Ablative suffix is substituted were the Genitive and Dative markers. However, it is important to note that no significant difference was observed between the Locative and the Genitive Case markers (21.6%) (z = -1.616, p = .106), and between the Genitive and Dative Case markers (13.5%) (z = -.277, p = .782). Other nominal suffixes such as the Accusative Case marker (8.1 %) as well as certain inflectional and derivational suffixes (5.4%) were incorrectly used instead of the Ablative marker significantly less (p < .01).

Table 4. Target Case Morphemes and the Substitution Patterns and Rates

Target morpheme	Percentages of morphemes used incorrectly instead of the target form (%)					
	Locative	Ablative	Dative	Genitive	Accusative	Other suffixes
Locative	N/A	35.7	20	22.9	5.7	15.7
Ablative	51.4	N/A	13.5	21.6	8.1	5.4
Dative	37.5	3.7	N/A	3.7	41.9	13.2
Genitive	3.8	23.1	15.4	N/A	50	7.7
Accusative	6.9	10.9	66.4	7.9	N/A	7.9

Omission and substitution errors which were made in the use of the Ablative marker are exemplified in (51) and (52), respectively:

(51) *Amerika'nın en eski üniversite-ler-in biri-si-dir. (E.A., 2014)

*Amerika-GEN the oldest university-PL-GEN one-POSS-GM

'It is one of the oldest universities in the USA.'

(52) *Mezuniyet-te sonra iki yüz yirmi bin dolar borcu olur. (P. H., 2015)

*Graduation-LOC after two hundred thousand dollar dept-POSS.3SG have-AOR.3SG

'One has a 220.000 dollars of debt.'

In the first example, Ablative is omitted after the word *üniversitelerin* although it should have been *üniversitelerinden*. The second example illustrates that Ablative was substituted by the Locative Case marker with the attachment of *–DA* to the word *mezuniyet*; yet, the correct form should have been *mezuniyetten*.

Regarding the third most successfully supplied Case morpheme with the accuracy rate of 87.8 %, namely the Dative Case marker, substitution errors were mostly made with the use of the Accusative (41.9%) and Locative Case markers (37.5%), which were then followed by the Genitive and Ablative Case markers as well as other nominal suffixes which are not under investigation in the study (e.g., Comitative marker *-(y)lA/ile* and Possessive marker *-(s)I*).

Examples of omission and substitution errors made by the participants in the use of the Dative marker are given in (53) and (54), respectively. In (53), to have a fully correct sentence, Dative should be attached to the word *cennet* as in *cennete.* In (53), on the other hand, Accusative marker at the final position of the word *program* seems to have replaced Dative as the correct form is *programa* instead of *programı*.

(53) *[Cennet benze-yen Güney Kaliforniya]'da aile-m-le büyü-dü-m. (A.J., 2013)
*[Heaven look like-SUB South California]-LOC family-POSS.1SG-COM grow up-PAST.1SG
'I grew up in South California that looks like heaven with my family.'

(54) *Ilk olarak, 2010 yıl-ın-da bu program-ı katıl-dı-m. (A.J., 2013)
*First, 2010 year-ACC-LOC this programme-ACC join-PAST.1SG
'First, I joined this programme in 2010.'

Considering the Genitive Case marker, most of the substitution errors occurred when the Accusative marker was used in the obligatory contexts in which the Genitive Case marker was required. Nevertheless, the difference between the

Accusative marker and the other Case suffixes, namely Ablative, Dative, Locative, as well as some other nominal suffixes, was not significant ($p < .05$).

The example sentences (55) and (56) given below illustrate the omission and substitution errors made with the use of the Genitive Case marker. In (55), the Genitive marker was obligatory at the word final position of *telefonu* since the sentence included a Genitive-Possessive construction, and the correct form of the word should have been *telefonunun*. Moreover, (56) shows the substitution of the Genitive by the Dative Case marker as observed in the proper name *Hanife'ye*, which should indeed be *Hanife'nin*.

(55) *Grafiğ-e göre [cep telefonu bir kaç alan-da kullan-ım-ı] yaklaşık eşit görünüyor. (A.F., 2015)

*Graph-DAT according to [mobile phone several place-LOC use-DER-POSS.3SG] approximately equal seems-PRES.3SG

'According to the graph, the (rate of) use of mobile phones in several places seems equal.'

(56) *Hatice, Hanife-ye tam tersine, kot pantolon ve tişört giy-erek futbol oyn-uyor. (A.F., 2015)

*Hatice-NOM Hanife-DAT as opposed to, jeans and T-shirt wear-DER football play-PRES.3SG

'Hatice plays football by wearing jeans and T-shirt as opposed to Hanife.'

Lastly, the least successfully supplied Case marker with the accuracy rate of 67.4%, namely Accusative marker, was significantly replaced most by the Dative marker ($p < .001$). The other suffixes that were used in place of the Accusative marker such as Ablative (10.9%), Genitive (7.9%), Locative (6.9%) as well as other nominal suffixes (7.9%), however, did not differ significantly ($p > .05$).

The omission and substitution errors made in the use of the Accusative marker are presented below with examples from the dataset:

(57) *Onlar Güney yerleşke gör-mek iste-di-ler. (P.O., 2013)
*They South Campus see-DER want-PAST.3PL
'They wanted to see the South Campus.'

(58) *İş bul-arak baba-m biz-e Amerika'-ya yerleştir-miş. (P.O., 2013)
*Job find-DER father-POSS.1SG we-DAT USA-DAT settle-EV.3SG
'My father settled us in the USA by finding a job.'

(59) *Ben-im en çok etkile-yen kişi ben-im dede-m. (M. W., 2014)
*I-GEN the most affect-DER person I-GEN grandfather-POSS.1SG
'The person who has affected me most is my grandfather.'

Omission error is presented in (57) whereas substitutions of the Accusative marker to the Dative and the Genitive markers are exemplified in (58) and (59), respectively. As to the example sentence in (57), the Accusative Case marker was omitted at the end of the word *yerleşke* as the correct form would be *yerleşkeyi*. In (58), one of the two nouns to which the Dative marker was attached, namely *biz*, indeed obligatorily required Accusative to be attached as in *bizi*. Lastly, as can be seen in (59), the Accusative marker seems to have been substituted by the Genitive Case suffix as observed in the word *benim*, which would be *beni* in its correct form with the attachment of Accusative instead of Genitive.

5.3.2 TAM markers

As above, the errors regarding the TAM markers are discussed in this section. First of all, Table 5 below displays the overall error rates for each target TAM morpheme.

The error type (omission and substitution) and percentage errors are presented in the table.

As can be seen below, the number of substitution errors (*Mdn* = 7.5) was significantly higher than omission errors (*Mdn* = 5, *z* = -3.353, *p* = .001, *r* = .49). When error types were compared for each TAM marker, it was found that omission and substitution errors did not differ significantly for Future, Past Tense and Evidential Tense markers (*p* > .05). However, the difference between the error types approached significance (*p* = .016) for Present Tense with the substitution errors outnumbering omission errors. As regards the Aorist marker, the number of substitution errors seems to significantly exceed omission errors (*p* < .001).

Table 5. Error Rates for TAM Markers

Suffixes	No. of errors			Percentage of errors (%)		
	Omission	Substitution	Total	Omission	Substitution	Total
Future (*-(y)AcAK*)	2	7	9	1.2	4	5.2
Past tense (*-DI*)	81	50	131	3.6	2.3	5.9
Present tense (*-(I)yor*)	80	154	234	6.7	12	18.7
Aorist (*-A/Ir*)	55	193	248	4.8	16.9	21.7
Evidential (*-mIş*)	41	69	110	13.3	22.5	35.8
Total (Mean)	259	473	732	(5.1)	(9.3)	(14.4)

A detailed analysis of substitution errors for each TAM marker with percentages of morphemes used incorrectly instead of the target form is displayed in Table 6 below.

As illustrated in Table 6, the most successfully supplied marker with accuracy rate of 94.8 %, the Future Tense marker, was substituted by another TAM marker only in seven cases. Substitution to the Aorist marker in five cases (71.4%) and to

Past Tense marker in two cases (28.6%) constituted all the substitution errors. The substitution errors are exemplified below together with an example of omission error:

(60) *[Sağlığ-ı-na önce dikkat et-se-ydi], bu gerek ol-ma-dı. (M.M., 2015)
*[Health-POSS.3SG-DAT before care about-COND-PCOP.3SG], this necessary be-NEG-PAST.3SG
'If he had cared about his health before, it (the surgery) would not have been necessary.'

(61) *Yavaş yavaş kötüleş-eceğ-im ve her gün biraz daha kötü ol-ur. (P.H., 2015)
*Slowly deteriorate-FUT.1SG and every day worse get-AOR.3SG
'I will deteriorate slowly and every day gets worse.'

Table 6. Target TAM Markers and the Substitution Patterns and Rates

Target morpheme	Percentages of morphemes used incorrectly instead of the target form (%)					
	Future	Past tense	Present tense	Aorist	Evidential	Other suffixes
Future	N/A	28.6	0	71.4	0	0
Past tense	6	N/A	18	12	30	34
Present tense	2.6	20.1	N/A	74.7	2.6	0
Aorist	17.1	19.7	53.9	N/A	9.3	0
Evidential	1.5	89.8	2.9	5.8	N/A	0

As can be seen above in (60), the Future Tense marker was omitted although it was obligatory in order to be able to refer to a hypothetical situation in the past or to regrets. The given sentence is about a person who did not care about his health and thus had to have a surgery later on. A hypothetically reverse situation is stated in (60); however, the Aorist or Future marker needs to be attached to the predicate to

have a fully correct sentence as in *olmazdı* or *olmayacaktı*. Another health-related issue is mentioned in (61), in which the Future marker was substituted by the Aorist. As a future event is referred, the attachment of the Future marker to both of the verbs is obligatory. In (61), while one of them was already marked by the Future marker, the other one needs to be corrected as *olacak* instead of *olur*.

As regards the Past Tense marker, substitutions were observed mostly when the Evidential marker (30%) was erroneously used. Nevertheless, the Wilcoxon signed-rank test revealed no significant differences between the Evidential Tense marker and other TAM markers, namely the Present Tense (18%), Aorist (12%) and Future Tense markers (6%) as well as other verbal suffixes (34%) ($p > .05$).

Below, examples of omission as well as substitution errors in the use of Past Tense marker are given. In (62), the Past Tense marker should be attached to the verb phrase *bilmiyorum* as in *bilmiyordum* now that there is a change of state from 'not knowing' to 'knowing'. The sentence in (63), on the other hand, illustrates a substitution error. The sentence is about the dream of the participant who wrote it, namely D.G. Considering that the action of dreaming is a completed one, and D.G has the direct evidence of the dream as he is the person who had the dream, the use of *–mIş* at the final position of the word *söylenmek* is incorrect, and the correct form is *söylendi* with the attachment of *–DI* to the verb.

(62) *Tagatay'-da yürü-dü-k. Önceden bu gibi bir yer ol-duğ-u-nu bil-mi-yor-um. (MM, 2015)

*Tagatay-LOC walk-PAST.1PL. Before this like a place be-DER-POSS.3SG-ACC know-NEG-PROG.1SG

'We walked in Tagatay. I did not know that there was a place like this.'

(63) * Bir ses bağır-dı: “Karton-u al!” diye bir adam söylen-miş. Şaşır-ıp dön-düm. (D.G., 2015)

*A voice yell-PAST.3SG: “Carton-ACC take-IMP.2SG!” that a man grumble-EV.3SG. Be surprised-CONJ turn back-PAST.1SG

‘A voice yelled: “Take the carton!” grumbled a man. I was surprised, and turned back.’

In the suppliance of the Present Tense marker, a great number of substitution errors are observed when the Aorist TAM marker (74.7) was produced in obligatory contexts where the Present Tense marker was required. Although the Past Tense (20.1%), Evidential (2.6%) and Future markers (2.6%) were also erroneously used in place of the Present Tense marker, the Wilcoxon signed-rank test revealed significant difference only between the erroneous use of Aorist and all the other suffixes ($p <$ .001). The example sentences below show omission as well as substitution errors made in the use of the Present Tense marker:

(64) *O-nun sosyal medya-sı çok arkadaş-ı ol-duğ-u-nu göster-di. (S.M., 2015)

*She-GEN social media-POSS.3SG a lot friend-POSS.3SG have-DER-POSS.3SG-ACC show-PAST.3SG

‘On social media (sites), she had a lot of friends.’

‘Her social media accounts showed that she had a lot of friends.’

(65) *Gelecek-te diplomat ol-mak iste-r-im ve bu yüzden Türkçe öğren-iyor-um. (D.W., 2015)

*Future-LOC diplomat be-DER want-AOR.1SG and thus Turkish learn-PROG.1SG

‘I want to be a diplomat in the future; and thus I am learning Turkish.’

In the first example sentence, a progressive state in the past is being described and thus the use of the Present Tense marker is obligatory, which would result in the correct form, *gösteriyordu*. In (65), on the other hand, the substitution of the Present Tense marker by the Aorist seems problematic now that the first but not the second is often used to denote a future event. Thus, the verb phrase *isterim* should be corrected as *istiyorum*.

A similar substitution pattern was observed in the use of the Aorist marker, as the Present Tense marker (53.9%) was supplied in the contexts where the Aorist marker was obligatory significantly more than other TAM markers ($p < .01$). Past Tense (19.7 %), Future (17.1%) and Evidential markers (9.3%) were also incorrectly supplied instead of the Aorist; however, these three suffixes did not differ significantly ($p > .05$).

Some of such substitution errors as well as omission errors in the use of the Aorist marker are exemplified in (66) and (67). The omission of Aorist in (66) at the end of the word *çık* to which an Evidential marker was attached has caused loss of meaning since the participant is talking about a certain habit of one of the Ottoman sultans, and Aorist is obligatory to mark the habitual aspect. Therefore, the Aorist marker needs to be attached to the verb phrase *çıkmış* as in *çıkarmış*. Moreover, the participant who wrote the sentence in (67) mentions the free time activities of Americans and needs to supply the Aorist marker in both of the clauses; however, she substituted Aorist with the Present Tense marker in the first clause by attaching it to the verb *okumak* 'to read'. Since free time activities can also be considered as habits, the use of Aorist is obligatory as in *okurlar*.

(66) *Sultan bu bahçe-ler-de avlan-ma-ya çık-mış. (V.K., 2015)

*Sultan-NOM these garden-PL-LOC hunt-DER-DAT go out-EV.3SG

‘The sultan used to go out for hunting in these gardens.’

(67) *Amerika-lı-lar genelde haber oku-yor-lar. (L.H., 2014)

*America-DER-PL usually news read-PRES.3PL

‘Americans generally read news.’

Lastly, with the lowest accuracy rate of 64.2, the Evidential marker was substituted by the Past Tense (89.8%) almost in each case as it is evident from the significant difference between the Past Tense marker and the other TAM markers that were erroneously supplied, namely the Aorist (5.8%), Present Tense (2.9%) and Future Tense markers (1.5%) ($p < .001$). This finding is noteworthy considering that the Evidential marker was found to be the most preferred suffix in place of the Past Tense marker as well as indicated earlier.

Some example sentences including omission and substitution errors regarding the use of the Evidential marker are presented below. For instance, in (68), V.K., the participant who wrote the indicated sentence, talks about an imaginary story. The story is about a man who leaves a suspicious paper box on the street, and while V.K. is arguing with the man, the police arrive and the man starts to run. Thus, V.K. finds out that the police have been after the man for some time based on reasoning. In the mentioned context, the attachment of the Evidential marker *–mIş* to the verb phrase *arıyor* is obligatory as in *arıyormuş* since V.K. makes an inference that is based on reasoning. In addition, the sentence in (69) presents two examples of erroneous substitution of the Evidential marker to the Past Tense marker. Talking about the memories of her grandfather, M.W. should have used the Evidential marker in the given and the following sentences now that she is reporting what she heard from her grandfather to another person. Therefore, *-mIş* should be attached to both of the verbs as in *ölmüş* and *kaçmış*.

(68) *Herif, [devlet memur-lar-ı-nı gör-ünce] koş-ma-ya başla-dı. Polis herif-i arı-yor. (V.K., 2015)

*Man-NOM [state official-PL-COPOSS-ACC see-SUB] run-DER-DAT start-PAST.3SG. Police man-ACC search for-PERF.3PL

'The man started to run when he saw state officials. (To my surprise), the police had been looking for him.'

(69) *Dede-m-in aile-si öl-dü ve o Almanya'-dan kaç-tı. (M.W., 2014)

*Grandfather-POSS.1SG-GEN family-POSS.3SG die-PAST.3PL and he Germany-ABL flee-PAST.3SG

'The family of my grandfather died and he fled from Germany.'

5.4 Summary of findings

Overall the results reveal that variability is not an across-the-board kind of a phenomenon in L2 Turkish. L2 learners of Turkish with English as their L1 show variability only in certain Case and TAM markers. Crucially, the study demonstrates that the observed variability show distinctive characteristics for each domain, namely nominal and verbal, and for each individual suffix in those domains. As can be recalled from Section 4.2, the research questions of the current study were posed to investigate all these characteristics. Accordingly, the possibility of a difficulty hierarchy for both Case and TAM markers as well as variability in the use of both groups of nominal suffixes were questioned. Furthermore, in the case of any observed variability, how this variability would manifest itself (omission or substitution) and which morphemes would be more vulnerable to variability as well as its possible reasons were also among the research questions. Finally, whether there

would be any difference between the variability observed in the use of nominal (Case morphology) and verbal morphology (TAM markers) was also asked.

Based on the descriptive results regarding the use of the Case and TAM markers, a difficulty hierarchy can be suggested as summarized in Table 1 and 2. According to the indicated results, the difficulty hierarchy (from the most difficult to the least difficult) for the nominal and verbal domains is as follows:

- Locative > Ablative > Dative > Genitive > Accusative

  (*-DA ≥ -DAn ≥ -(y)A ≥ -(n)In/-Im > -(y)I*)

- Future > Past tense > Present tense > Aorist > Evidential

  (*-(y)AcAK ≥ -DI > -(I)yor > -A/Ir > -mIş*)

Despite the suggested difficulty hierarchy seen above, the correct suppliance of all Case and TAM markers were overall high. Moreover, repeated measure comparisons with Wilcoxon signed-rank test revealed no significant differences between certain Case morphemes such as Locative and Ablative; Ablative and Dative; Ablative and Genitive; Dative and Genitive. Similar analyses found no significant differences between TAM markers such as Past Tense and Future markers, and Present Tense marker; Future marker and Aorist ($p > .01$). This, in turn, implies that some of the differences observed might be due to chance only. The Accusative Case marker in the nominal domain and the Evidential marker in the verbal domain, however, have been found to be significantly more susceptible to variable use since they were the least successfully supplied suffixes. Potential reasons for this finding will be further discussed in Chapter 6.

Regarding the research question of how the variability observed manifests itself in the written productions of the participants, the error percentages in Tables 3 and 5 can be referred. As can be seen in Table 3, omission errors (9.2%) in the use of

the Case morphemes are significantly more common than substitution errors (4.5%) ($p < .001$). Nonetheless, in comparison to omission errors (5.1%), more substitution errors (9.3%) were observed in the use of TAM markers ($p = .001$). Considering the overall number of omission (1012) and substitution errors (843) in both domains, constituting 54.6% and 45.4% of total errors respectively, no significance difference was found ($p = .061$).

Lastly, the comparison of the variability observed in both domains has revealed a significant difference between the mean accuracy percentages of the Case morphemes and the TAM markers, which suggests that the participants performed better in the nominal domain ($p = .003$). Nevertheless, it is noteworthy to restate that the correct suppliance of morphemes in both domains have been found to be really high with small number of omission and substitution errors only.

5.5 Conclusion

The results of the current study have shown that although a difficulty hierarchy can be suggested for both Case and TAM markers based on their accuracy rates, the variability has been observed to be confined to certain suffixes only. Accordingly, the most erroneously used suffixes have been found to be the Accusative Case marker in the nominal and the Evidential marker in the verbal domains. All the other suffixes have been supplied with a high accuracy rate. Moreover, the observed variability has been found to manifest itself mostly in the form of omission rather than substitution with the exception of higher number of substitution errors in the verbal domain. Finally, the comparison of the nominal and verbal morphology has demonstrated that Case morphemes were supplied with higher accuracy in comparison to the TAM markers.

CHAPTER 6

DISCUSSION AND CONCLUSION

6.1 Introduction

The current study has investigated the L2 acquisition of inflectional morphology in Turkish by L1 English speakers based on written production data. The suffixes under investigation were the Case morphemes in the nominal domain and the TAM markers in the verbal domain. The research questions posed at the beginning of the study concerned the possible variability (if any) observed in the L2 learners' suppliance of nominal and verbal morphemes. The findings enable us to identify potential differences in producing the nominal and verbal suffixes and might reveal a difficulty hierarchy in these domains. Crucially, the findings can also show us whether morphological variability (appearing mostly in the form of omission) is an inevitable phenomenon even in the L2 acquisition of a language with regular nominal and verbal inflectional paradigms.

This chapter discusses the main findings of the study with reference to the predictions. First of all, the findings are summarized and interpreted in reference to previous research. This is then followed by a discussion on the implications of the findings in the field of L2 teaching of Turkish. The limitations and further suggestions are then presented in the last section.

6.2 Discussion of the findings

The major finding of the current study is that L1-English-speaking learners of Turkish do not appear to show sweeping variability in supplying inflectional morphology in either the nominal (Case morphemes) or the verbal (TAM markers)

domains in their written productions. In other words, the high accuracy rates across most target morphemes suggest that L2 Turkish morphology is not necessarily characterized by variability to the extent that it is observed in L2 acquisition of other languages such as English. The findings suggest that L2 learners appear to have problems only in certain morphemes in each domain.

The finding that variability in the data is not widespread either in the nominal or verbal domain is not in conformity with many of the linguistic accounts of L2 morphology that predict undifferentiated variability across different morphemes (cf. Haznedar, 1997, 2001; Haznedar & Schwartz, 1997; Lardiere, 1998a, b). It is important to note, however, that the crucial difference between the current study and previous studies that reveal much variability in oral production is that the current findings are based on written production, where participants did have more time to monitor and correct their utterances.

Another finding that cannot be explained by the existing linguistic accounts of L2 morphology is that less variability was significantly observed in the use of Case morphemes in comparison to TAM markers (p = .003). As mentioned above, the current accounts on L2 morphology do not predict differences between suffixes or domains in the amount of variability observed. This finding is also not in line with previous research; and therefore was not predicted in the current study as well. One explanation for this unexpected finding could be that substitution errors committed in the use of TAM markers occurred in continuous contexts. In other words, once the grammatical rules for sequence of tenses (i.e., the rules governing verb tenses) are violated in one context, this error persisted in the subsequent contexts. Thus the number of tense errors in the form of substitution appeared high. Another reason could be the frequency of use considering that the TAM markers are mostly

encountered once in every sentence as they are attached to the verbal predicates whereas the Case morphemes appear almost in all nouns in a sentence; and thus, they are more likely to be mastered. This is also evident in the current data in which the number of obligatory contexts for the Case markers (8228) is higher than the TAM markers (5115). In what follows, the findings regarding each domain, namely nominal and verbal, will be discussed in detail.

6.2.1 Nominal domain

The findings have shown that the Accusative Case was the target morpheme that triggered more variability than other morphemes in the nominal domain. Previous research has shown that Turkish-speaking children have problems in acquiring the Accusative marker as well. Based on the findings of her study, for instance, Ketrez (2004) indicates that the Accusative Case is problematic for Turkish children until later years compared to the other Case suffixes. The fact that it is also the most erroneously used Case morpheme by L2 learners of Turkish (Altunkol & Balcı, 2013; Akdoğan, 1993; Antonova-Ünlü, 2015; Gürel, 2000; Papadopolou et al., 2010) can be accounted for in several ways. One source of difficulty observed with the use of the Accusative can be its relation with word order restrictions in Turkish. As can be recalled from Section 3.2.5, scrambling is mainly determined by pragmatic or discourse factors and it is possible only if the object is marked by the Accusative Case marker (Enç, 1991). Therefore, scrambling and the role of Accusative in scrambled sentences may be difficult to grasp for L2 learners of Turkish. Moreover, L2 learners can omit the Accusative marker at the end of a Genitive-Possessive constructions as can be seen in (70) since the correct form should have been *yaklaşımını* instead of *yaklaşımı*. It is possible that the learners confuse the 3rd

person singular Possessive marker *–SI* attached to the head of the NP with the Accusative *–(y)I*; and thus, they simply omit the Accusative marker.

(70) *[O-nun yaklaşım-ı] sev-mi-yor-um. (M. M., 2015)

*[She-GEN approach-POSS.3SG] like-NEG-PRES.1SG

'I don't like her approach.'

The findings have also revealed the following ranking which might be labelled as a difficulty hierarchy among the Case morphemes based on the mean accuracy percentages:

- Locative > Ablative > Dative > Genitive > Accusative

  (*-DA* ≥ *-DAn* ≥ *-(y)A* ≥ *-(n)In/-Im* > *-(y)I*)

Although non-parametric test results have shown that some of the Case suffixes, namely Locative and Ablative, Ablative and Dative, Ablative and Genitive, Dative and Genitive did not differ from one another significantly ($p > .01$), the hierarchy suggested above is mostly in line with the previous research (e.g., Altunkol & Balcı, 2013; Antonova-Ünlü, 2015; Gürel, 2000). For example, in Altunkol and Balcı's (2013) study, Ablative and Locative were found to be the most accurately used suffixes whereas Accusative was observed to be by far the least successfully supplied one. The findings of these studies are important since they imply that variable use of morphemes is confined to only certain morphemes as the current study does.

With respect to the differences in the extent of omission and substitution errors in the nominal domain, it was found that omission errors were significantly more than substitution in the suppliance of the Case morphemes ($p < .001$). This finding is in line with the MSIH and most previous work, which have taken the omission errors in L2 use of inflectional morphology as evidence for a performance

deficit approach in L2 acquisition of morphology (see Section 2.2 for a detailed review of theoretical background).

The detailed analysis of the substitution errors in the nominal domain has further revealed some patterns. It was observed that the Dative and Accusative as well as Locative and Ablative Case markers are the suffixes that were used interchangeably most. As to the Dative and Accusative Case markers, the bidirectional substitution errors may result from the fact that both suffixes mark objects. The Dative Case morpheme is only attached to indirect objects of ditransitive verbs whereas the Accusative Case morpheme may mark direct objects of both transitive and ditransitive verbs. The fact that they are both supplied to mark objects, and they can be present at the same time in a sentence provided that a ditransitive verb is used, it is possible that L2 learners might have confused Dative with Accusative, or vice versa. Recall also that the Accusative suffix is substituted by the Dative suffix at a rate of 66.4%, while Dative is replaced by Accusative 41.9% of the time, suggesting that the direction of the substitution between these two morphemes is slightly different as Accusative Case appears more vulnerable to incorrect use.

L1 effects could also be mentioned at this point considering that the indicated suffixes may not be overtly realized in English at times as exemplified below (Luk & Shirai, 2009):

(71)

a. Ali gave Ayşe a pen.

b. Ali gave a pen to Ayşe.

Although the difference between the Accusative and Dative markers are salient in the example sentence (71b) considering that the Dative is marked with the

use of ‘to’, neither the direct object (pen) nor the indirect object (Ayşe) are overtly marked with the Accusative and Dative Case morphemes in (71a). The instances of such sentences as in (71a) may have led the English-speaking learners of Turkish to have difficulty in matching the suffixes with their functions since they are obligatorily overt in Turkish.

Regarding Locative *-(DA)* and Ablative *-(DAn)*, learners seem to have problems in determining which Case marker is used as an oblique object or a complement as required by certain verbs, adjectives or bare postpositions. Thus, the problem that they face seems to be lexical rather than morphological. As can be seen in previously mentioned examples (72) and (73), speakers seem to have confused which Case morpheme the bare postposition *sonra* and the verb *ölmek* take, and thus make substitution errors.

(72) *Mezuniyet-te sonra iki yüz yirmi bin dolar borcu olur. (P. H., 2015)

(73) *Tarık [daha çok alkol kullan-ma-ya başla-yınca] araba kaza-sın-dan öl-dü. (A.F., 2015)

Another possible explanation is that it can be a simple spelling error which caused most of the substitution errors observed with these suffixes since they can only be differentiated by an additional letter which is at the end of the Ablative marker.

To sum up, overall results have shown that English-speaking learners of Turkish supply Case morphology with high accuracy rate. However, the Accusative Case morpheme seems to cause persistent problems for the learners since it is the least successfully supplied Case morpheme among all. Considering the error types, omission errors outnumber substitution errors in the use of Case morphology. However, detailed analysis of substitution errors has revealed that certain

morphemes, namely Accusative and Dative as well as Ablative and Locative, are substituted in a bidirectional fashion. Possible explanations for the observed findings have been further discussed.

6.2.2 Verbal domain

It has been revealed in the current study that *–mış* suffix is the most erroneously supplied TAM marker. The findings further show, based on the mean accuracy percentages, that a difficulty hierarchy among TAM markers can be suggested as shown below:

- Future > Past tense > Present tense > Aorist > Evidential

  (*-(y)AcAK* ≥ *-DI* > *-(I)yor* > *-A/Ir* > *-mIş*)

Despite the observed hierarchy in mean accuracy percentages as shown above, non-parametric test results have demonstrated that there was no significant difference between some of the TAM markers such as *-(y)AcAK* and *-DI* as well as *-(I)yor*, *-A/Ir* and *-(y)AcAK* ($p > .01$). Nevertheless, the given hierarchy seems to be in line with the previous research. Kaili, Çeltek, & Papadopoulou (2016), for instance, also revealed that *-(y)AcAK* and *-DI* were the least variably supplied TAM markers while *-A/Ir* and *-mIş* were the most variably used ones.

With respect to high error percentage in the use of the Evidential marker *–mIş*, it was noted by Aksu-Koç and Slobin (1985) that the *–mIş* suffix is acquired late by Turkish monolingual children as well, and it is attributed to the cognitive requirements of the different modalities of *-mIş* such as different roles of the speakers, and nature of source of evidence (direct or indirect) as mentioned before. Furthermore, Kaili, Çeltek and Papadopoulou (2016) report that *-mIş* is one of the most problematic suffixes for L2 learners of Turkish and argue that multifunctional

nature of the indicated morpheme leads to variable use. Following the authors, it is also assumed in the current study that distinguishing between different modalities of *-mIş* (see Section 3.3.4 for different modalities of *-mIş*) might necessitate certain cognitive skills to be employed at the same time, which may confuse the learner and lead to variable use. To give an example, while making an inference based on reasoning as in the previously given example below (74), the teacher made use of indirect evidence since she did not actually see someone else doing the homework. However, in order to be able to make a correct inference, she needed justifiable evidence which, in this case, would be that she knew the student did not have the capacity to do the homework, but now that it was done in such a nice way, it must have been someone else having done it.

(74) Bu ödev-i sen yap-ma-mış-sın.

As can be seen above, for different uses of *-mIş*, L2 learners of Turkish might have difficulty in analyzing the context and employing the appropriate cognitive skills, which in turn results in omission or substitution of *-mIş*.

As to the error types in the verbal domain, it was found that the TAM markers were mostly substituted rather than being omitted (p = .001). Remember from the Section 6.2.1 that omission errors outnumbered substitution errors in the nominal domain. Such dichotomy is not anticipated in the context of nominal and verbal domain. In other words, in line with the MSIH and most previous work (and thus in the current study as well), omission errors were predicted to prevail substitution errors. In most of the studies investigating the L2 acquisition of inflectional morphology (e.g., Gürel, 2000; Haznedar, 2006; White, 2003), L2 learners were mostly observed to omit the morphemes, which was further taken as evidence for performance deficit approach in L2 acquisition of morphology (see Section 2.2 for a

detailed review of theoretical background). The unexpected dominance of substitution errors in the verbal domain goes against the MSIH that assumes a default unspecified option that L2 learners fall back on. Similarly, this finding is not in line with the Feature Reassembly Hypothesis (FRH) (Lardiere, 2009) which posits that L2 learners are able to notice the contrasts (if any) in the way formal features are realized in their L1 and L2, and eventually disentangle the features from their correspondent forms in L1 and reassembly those features into L2. In cases of variability, the FRH does not predict a mis-assembly of features but assumes a failure to assembly feature bundles onto their morpho-lexical counterparts, which in turn may result in omission but not substitution errors. Thus, the finding that the nominal domain is characterized with omission errors while the verbal domain with substitution errors cannot be theoretically accounted for. An alternative account could be that once a substitution error is committed in the TAM markers, the same erroneous form continues to be used in the subsequent context that is linked to the previous semantic context in the essay. Thus, in all subsequent contexts, the same erroneous form is counted as another substitution error as exemplified below:

(75) *Adam ayağa kalkıp konuşmaya devam ed-er. Gördügümüz şapkalı adam odaya gir-di. Bir adamla bir programı göster-di. Odadan çık-tı. (L.R., 2015)
'The man stands up and continues to talk. The man that we saw entered the room. He showed a man and a program. He left the room.'

As can be seen in (75), L.R. is telling one of her dreams firstly by using the Aorist; yet when she substituted it with *-DI* in the second sentence, all the subsequent sentences were also marked with *-DI*. Although both suffixes can be used in the given context, a sudden change in using them as seen above is not acceptable. One of them should be chosen at the beginning, and continually used until the end.

Therefore, each use of *-DI* was counted as a substitution error in the above example resulting in a total of three errors. Yet, it can be argued that only one error is observed in (75) and it is the use of *-DI* instead of the Aorist morpheme in the first instance. All others are simply the repetition of the same error.

The detailed analysis of the substitution errors in the verbal domain has further revealed some patterns. The TAM markers *-A/Ir* and *-(I)yor*, and *-DI* and *-mIş* were found to be supplied interchangeably in the verbal domain. The interchangeable use of *-A/Ir* and *-(I)yor* might be due to the fact that certain functions of these suffixes may be too similar for L2 learners to differentiate. For instance, both suffixes can be used to make generalizations although the subtle difference between the two suffixes is that the generalizations referred by the Aorist are mostly scientific facts or rules whereas a direct observation of the speaker is necessary while expressing generalizations with *–(I)yor* (Göksel & Kerslake, 2005). As can be seen in (76) below, the attachment of the negative form of Aorist to the verb *almak* 'to buy' as in *alamaz* implies that it is a kind of rule although it is indeed a generalization made based on observation; and thus requires *–(I)yor* to be used instead of the Aorist. Regarding the substitution errors observed with *–DI* and *–mIş*, following Kaili, Çeltek, and Papadopoulou (2016), it can be suggested that in addition to the similarity of certain functions of *-mIş* to *–DI*, the multifunctional nature of *–mIş* as well as the cognitive skills that it requires were most probably the main sources of difficulty for L2 learners of Turkish in this study as discussed above.

(76) *Çok fazla sigorta olan kişiler istediği ilaç al-amaz çünkü fazla pahalı. (J.D., 2015)

*A lot of people with insurance cannot buy the medicine that they want because it (medicine) is really expensive.

6.3 Conclusion

In this study, the L2 acquisition of inflectional morphology in Turkish by L1 speakers of English was investigated based on the written data collected from the participants. The specific morphemes under investigation were the Case morphemes (Ablative, Locative, Dative, Genitive and Accusative) in the nominal and the TAM markers (Imperfective/Habitual Aspect and Generic meaning marker *-A/Ir*, Past Tense and Perfective Aspect marker *-DI*, Evidential marker *-mIş*, Imperfective Aspect and Present Tense marker *-(I)yor* and Future marker *-(y)AcAK*) in the verbal domains. The principal aim was to see whether L2 learners show variability in their use of inflectional morphology in an agglutinative language even though they have a considerable amount of time to monitor and correct their productions of these morphemes in their written assignments.

The results showed that L2 learners supplied all the target morphemes with high accuracy, and that variability was confined to certain morphemes only. Accordingly, a difficulty hierarchy for both nominal and verbal morphemes was also revealed, and some morphemes were found to be significantly more difficult compared to the others. Although some of the differences between the target suffixes were not significant, according to the hierarchy observed in this study, the Case morphemes Ablative *-DAn* and Locative *-DA* as well as the TAM markers *-(y)ACAK* and *-DI* were observed to be the most successfully used suffixes. The Accusative Case suffix *-(y)I* in the nominal domain and the Evidential marker *-mIş* in the verbal domain, on the other hand, were observed to be the least successfully supplied morphemes. The multifunctional nature of these morphemes was thought to be the main reason of difficulty. Moreover, Case morphemes were found to be more accurately supplied in comparison to TAM markers. The occurrence of substitution

errors in the use of TAM markers in continuous contexts and the mastery of Case morphemes due to their higher frequency of use in sentences in comparison to TAM markers were thought to be possible explanations for the observed finding. This finding, however, together with the previous findings, cannot be accounted for by the current views on the L2 acquisition of morphology.

Considering the form of variability, the overall number of omission errors (no inflection) exceeded substitution errors (faulty inflection) although the dominance of the error types in each domain was different. In the nominal domain, omission errors were observed more whereas more substitution errors were made in the verbal domain. Although the former finding was in accordance with the previous research, the latter was unexpected. One possible reason for this unpredicted finding might be the repeated use of incorrect TAM markers on verbs once the sequence of tenses was violated once. This can also account for the better use of the Case morphemes than the TAM markers.

Overall, the current study has revealed morphological problems even in the written modality (cf. Goad, White, & Steele, 2003). Nevertheless, compared to previous findings on the acquisition of L2 English morphology, for example, the highly systematic and accurate use of L2 Turkish morphemes in the current study suggests that the L2 morphological system (richness and regularity) facilitates the extent of native-like ultimate attainment of morphemes. An accuracy hierarchy found within the nominal and verbal morphology implies the selective nature of variability and calls for further research examining the linguistic causes of variable use of L2 inflections.

Lastly, this thesis hopefully contributes to the field of L2 acquisition with its specific reference to the variability issue in the use of inflectional morphology in

Turkish considering that it is the first study to investigate and also to compare the variability phenomenon in nominal as well as verbal domains based on written production data in a highly inflecting language.

6.4 Pedagogical implications

The findings of the current study have several implications on the teaching of inflectional suffixes to L2 learners of Turkish. First of all, the difficulty hierarchy revealed in this study as in the previous ones could not only provide insight as to problematic areas in advance in teaching Turkish as an L2 but also help teachers/instructors find more effective ways for tackling the expected problems.

Particularly considering the most erroneously used suffixes, namely the Accusative *-(y)I* and the Evidential *-mIş*, some researchers assert that form-meaning mapping can be ensured instead of focusing solely on form or meaning (DeKeyser, 2005; Lardiere, 2009). Since these morphemes are multifunctional in nature, each function and use of the same morpheme can be emphasized, exemplified and practiced while teaching. The differences between how certain features are realized in learners' L1 and L2 may also be emphasized since for inflectional morphology to be fully acquired, all features must be disentangled from their morpho-lexical components in the L1 and should be reassembled into those in the L2. Nevertheless, certain difficulties might be encountered in form-meaning or feature-lexical component mapping such as transparency, which may result from redundancy (the use of semantically unnecessary form), opacity (the same form expressing different meaning, and different forms expressing the same meaning), or optionality in the sense that the absence or presence of a suffix depends on pragmatics or discourse factors (DeKeyser, 2005, p. 8). For instance, teaching the form-meaning mapping of

the Accusative marker may be hindered by optionality in the way as indicated right above considering that the overt use of the suffix is partly dependent upon subtle issues such as pragmatics as mentioned in Section 3.2.5 (Bolgün, 2005, p. 129). Similarly, teaching that both progressive events and states can be expressed by the same TAM marker, which is *-(I)yor*, in Turkish (see Section 3.3.5 for a review of functions of *-(I)yor*) may be challenging since these features are denoted by different tenses in English (Lardiere, 2009). In order to overcome these difficulties, frequency can be a key factor not only in exposure but also in use (Ellis, 2002, 2003). Therefore, L2 learners of Turkish must be exposed to input considering the Case morphemes and TAM markers, and they need to be encouraged to use these suffixes in their spoken or written productions.

An opposing suggestion as regards explicit teaching of inflectional morphology in L2 Turkish comes from psycholinguistic research studies (Gürel & Uygun, 2013; Kırkıcı & Clahsen, 2013; Uygun & Gürel, 2016). According to the findings of these studies, L2 processing of Turkish inflectional morphology employs decomposition of the root and the inflectional suffix only at the initial stages of acquisition, but a direct access (full-form) route, which implies accessing the inflected words via whole word activation, is preferred with increasing proficiency. Therefore, these researchers propose that activities that would lead learners to employ the direct access route must be preferred in classrooms instead of encouraging activities employing conscious analysis of the morphology (see also Gürel, 2016, the conclusion chapter).

Although it is now clear that L2 learners supply inflectional morphology variably in Turkish, there is no agreement as to how to teach it. Further research is needed in this respect.

6.5 Limitations and suggestions for further research

The current study has a number of limitations although it has reached at its aims. The main limitation is the variable number of obligatory contexts for each participant since it posed certain difficulties in data analysis. Considering that results were reported on the mean accuracy percentages which were obtained by dividing the number of correct uses by the number of obligatory contexts for each morpheme, it cannot be claimed that the same percentage in one case (such as 10/20 = 50%) represents the same rate of success in another (such as 50/100 = 50%). Even increasing number of obligatory contexts and/or correct uses may imply a development in the acquisition of the suffixes under investigation. This limitation of the study may have biased the statistical comparisons between suffixes; and thus may have led some differences between suffixes to turn out to be insignificant or vice versa. Therefore, well-designed tasks that include an equal number of obligatory contexts for each suffix should be employed in conducting further research in order to be able to appropriately interpret the results obtained from statistical analyses.

It should also be mentioned that no native speaker group could be tested in the current study as a comparison group due to the conditions at the time of data collection although testing the indicated group is necessary so as to compare their performance with the L2 group and make better interpretations of L2 performance. Lastly, the collection of not only written but also spoken data and a comparison of L2 learners' performance in both might also help researchers to have a more comprehensive understanding of L2 acquisition of inflectional morphology in Turkish.

APPENDIX A

SUMMARY OF TARGET MORPHEMES, THEIR FORMS AND FUNCTIONS

Domain type	Target morpheme	Form	Functions
Nominal	Ablative	*–DAn*	1) adverbial indicating departure, source, cause, or material 2) an oblique object of such verbs as *kork-* 'be afraid (of)', or as a complement of such adjectives as *memnun* 'pleased (with) and such bare postpositions such as *önce* 'before' and *sonra* 'after' 3) modifier when it is used in comparative structures 4) marks the hole of an entity in partitive meaning structures
	Locative	*–DA*	1) marker of location in time or place 2) oblique object of such verbs as *karar kıl-* 'decide (on)'
	Dative	*-(y)A*	1) indirect object of ditransitive verbs denoting such meanings as the recipient or beneficiary and the target or destination of an action 2) oblique object of certain verbs such as *sevin-* 'be happy (about)' and complement of such adjectives as *uygun* 'suitable' and postpositions like *göre* 'according to' or *kadar* 'until'. 3) marks the agent of the transitive verb in causative structures and marks
	Genitive	*-(n)In/-Im*	1) denotes the meaning of the possessor in Genitive-Possessive structures 2) marks the hole of an entity in partitive meaning structures 3) can mark predicate nominals 4) can mark the subjects of subordinate clauses
	Accusative	*-(y)I*	1) Direct object (DO) marker 2) Determines scrambling 3) Obligatory when DO a. is a proper name or a pronoun, b. is marked with a Possessive marker *–(s)I*, c. is modified with the use of *–ki* or by a relative clause, d. follows a demonstrative such as 'o', 'şu' (that) or 'bu' (this), e. is preceded by 'bütün' (all), 'her' (every) or 'bazı' (some), f. is a question word such as 'hangisi' (which), 'kim', 'kimler' (who), 'nere', 'nereler' (where).
Verbal	Aorist	*-A/Ir*	1) marker of habitual aspect and generic meaning 2) marker of different modalities such as the consequence of a hypothetical situation, an assumption that generally denotes future reference as well as such speaker-oriented modalities as willingness, wishes and permissions.

			3) polite requests and offers
	Past Tense and Perfective Aspect	*-DI*	1) marker of past tense, perfective and perfect aspect for events based on direct evidence
	Evidential	*–mIş*	1) marker of past tense and perfective aspect for events based on indirect evidence 2) marker of inference that is made based on reasoning or previous knowledge 3) marker of hearsay, admiration about the actuality of the event or scorn or irony on the part of the speaker 4) used in traditional narratives which are generally told to children
	Present Tense and Imperfective Aspect	*–(I)yor*	1) marker of present tense and imperfective (progressive/habitual events/states) and perfect aspects 2) marker of ingressive (beginning of a situation) and iterative (series of a repeated action) aspects 3) denotes future time reference for scheduled events
	Future	*-(y)AcAK*	1) explicit marker of future 2) marks assumptions about which the speaker is confident either due to the prior knowledge or the possibility of immediate verification

APPENDIX B

CLOZE TEST

İsim: ……..
Aşağıdaki parçayı okuyarak boşlukları anlamlı kelimelerle doldurunuz.

Türkiye

Türkiye dünyada yer alan 180 ülkeden biridir. Türkiye, Avrupa ve Asya kıtalarının arasında, _____[1] başka değişle Avrasya'da bulunmaktadır. Türkiye devletinin _____[2] adı Türkiye Cumhuriyetidir. Türkiye sekiz ülke _____[3] sınır komşusudur. Türkiye'nin üç tarafı denizlerle _____[4]. Türkiye Avrupa ile Asya kıtalarının birleşim _____[5] yer aldığı için dünyada jeopolitik olarak _____[6] önemli bir yeri vardır. Türkler nüfusun _____[7] bir kısmını oluşturmaktadır. Türkiye'de en yaygın _____[8] İslam olup ülkenin resmi dili Türkçedir. _____[9] en büyük gelir kaynaklarından biri turizmdir. _____[10] yıl Avrupa'nın değişik ülkelerinden Türkiye'ye milyonlarca _____[11] gelmektedir ve ülkenin değişik bölgelerini ziyaret _____[12].

Türkiye Osmanlı İmparatorluğu'nun yıkılması ile 1923 _____[13] Mustafa Kemal Atatürk önderliğinde kurulmuştur. Türkiye'nin _____[14] ve laik bir yapısı vardır ve _____[15] yapı anayasa tarafından belirlenmiştir. Türkiye oldukça _____[16] bir kültür ve tarih mirasına sahiptir. Türkiye _____[17] devletleri ile iyi ilişkiler kurup Avrupa Konseyi, NATO, OECD gibi _____[18] üye olmuştur. Türkiye 2005 yılında Avrupa _____[19] ile tam üyelik konusunda müzakerelere başlamıştır ve _____[20] halen sürmektedir. Türkiye aynı zamanda doğu _____[21] ile de kültürel, ekonomik ve tarihi _____[22] koparmayıp iyi ilişkilerini devam ettirip tüm _____[23] tarafından gelişmiş bir ülke olarak görülmektedir. _____[24] yanı sıra Türkiye politika uzmanları ve _____[25] tarafından bulunduğu bölgede önemli bir güç olarak görülmektedir.

APPENDIX C

BACKGROUND QUESTIONNAIRE

- Adınız-Soyadınız:_____
  (*First name, Last name*)
- E-posta adresiniz:_____
  (*Email address*)
- Doğum tarihiniz: _____
  (*Date of birth)*
- Doğum yeriniz: _____
  (*Place of birth)*
- En son bitirdiğiniz/aldığınız derece nedir?
  (What is the highest level of education you have completed?)

  Lise: _____ Üniversite/Lisans_____ Yüksek Lisans:_____Doktora:
  (High school) (Bachelor's degree) (Master's Degree) (PhD)
- Ana diliniz nedir? _____
  (What is your mother tongue?)
- Hangi dil(ler)de eğitim gördünüz?
  (What was your language of education?)

  İlkokulda:_____Ortaokulda:_____
  (At primary school) (At secondary school)

  Lisede:_____Üniversitede:_____
  (At high school) (At university)
- Türkçeye ilk başlama yaşınız nedir?
  (What is your age of first exposure to Turkish?)
- Türkçeyi ilk nerede öğrenmeye başladınız? _____
  (What is your place of first exposure to Turkish?)
- Toplam kaç yıldır Türkçe öğreniyorsunuz? (*örneğin, 8 aydır*)_____
  (How long have you been learning Turkish?)(e.g., 8 months)
- Daha önce Türkiye'de yaşadınız mı? Evet: _____ Hayır_____
  (Have you ever lived in Turkey before?) (Yes) (No)
- Evet ise, ne kadar süre Türkiye'de kaldınız? _____
  (If so, how long did you stay in Turkey?)
- Türkiye'de iken Türkçeyi ne kadar sıklıkla kullanıyorsunuz (*örn. haftada 5 saat*)_____
  (How often do you use Turkish while in Turkey?) (e.g., 5 hours a week)
- Kendi ülkenizde iken Türkçeyi ne kadar sıklıkla kullanıyorsunuz (*örn. haftada 5 saat*)___
  (How often do you use Turkish while in your country?) (e.g., 5 hours a week)
- Kendi ülkenizde aşağıdaki ortamlarda genellikle hangi dili kullanıyorsunuz?
  (In your home country, which language do you generally use in the settings below?)

  Ev:_____İş/Okul:_____ Sosyal:_____
  (Home) (Job/School) (Social)
- Türkiye'de iken aşağıdaki ortamlarda genellikle hangi dili kullanıyorsunuz?
  (In Turkey, which language do you generally use in the settings below?)

  Ev:_____İş/Okul:_____ Sosyal:_____
  (Home) (Job/School) (Social)

- Daha önce sınıf ortamında Türkçe dersi aldınız mı?
  (Have you ever taken any formal instruction in Turkish?)

  Evet ise, nerede ve ne kadar süre Türkçe ders aldınız?_____
  (If so, where and how long have you taken formal instruction in Turkish?)

- Daha önce Türkçe yeterlilik sınavına girdiniz mi? Evet ise, sonucu yazınız_____
  (Have you ever taken a proficiency/placement exam in Turkish? If so, please note the result)

- Aşağıdaki alanlarda Türkçe yetinizi nasıl değerlendirirsiniz?
  (How would you rate your linguistic ability in the following areas?)

	Başlangıç *(Beginner)*	Orta *(Intermediate)*	İleri *(Advanced)*	Ana dili düzeyinde *(Near-native)*
Okuma *(Reading)*				
Yazma *(Writing)*				
Konuşma *(Speaking)*				
Dinleme *(Listening)*				
Genel *(Overall competence)*				

- Neden Türkçe öğreniyorsunuz?
  *(Why do you learn Turkish?)*_____
  _____
  _____
  _____

- Türkçe dışında bildiğiniz yabancı diller var mı? Varsa neler olduğunu yazınız ve aşağıdaki alanlarda o dillerdeki yeti durumunuzu değerlendiriniz:
  (Do you speak any other foreign/second languages besides Turkish? If so, please note which languages and rate your linguistic abilities in those languages below)

Yabancı dil 1:_____
(Foreign/Second language 1)

	Başlangıç *(Beginner)*	Orta *(Intermediate)*	İleri *(Advanced)*	Ana dili düzeyinde *(Near-native)*
Okuma *(Reading)*				
Yazma *(Writing)*				
Konuşma *(Speaking)*				
Dinleme *(Listening)*				
Genel *(Overall competence)*				

Yabancı dil 2:_____
(Foreign/Second language 2)

	Başlangıç *(Beginner)*	Orta *(Intermediate)*	İleri *(Advanced)*	Ana dili düzeyinde *(Near-native)*
Okuma *(Reading)*				
Yazma *(Writing)*				
Konuşma *(Speaking)*				
Dinleme *(Listening)*				
Genel *(Overall competence)*				

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