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An Analysis of Epistemic Modality in Turkish: The Case of –Dir

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ÖZET

Bu çalışmada Türkçedeki epistemik kipler anlatılmaktadır. Epistemik kiplik belirteçleri; morfolojik belirteçler, sözcüksel belirteçler ve sözdizimsel belirteçler olarak kategorize edilebilir (Kerimoğlu, 2010). Bu makale -Dir morfolojik işareti üzerinde yoğunlaşmakta ve onun modern versiyonunu Eski Anadolu Türkçesiyle karşılaştırmaktadır. Bu karşılaştırmadan hareketle -Dir işaretleyicisinin zaman içindeki değişiminin olası sebepleri sunulmuştur. Bu nedenlerin telaffuz zorluğu veya ünlü düzleşmesi olabileceği öne sürülmüştür. Ayrıca, bu çalışma, morfolojik belirteçlerin incelenmesindeki mevcut eğilimleri göstermek amacıyla dilin gerçek zamanlı işlenmesini sunduğundan, Türkçede -Dir belirteciyle ilgili daha önce yapılan teorik araştırmalara ve ampirik araştırmalara, özellikle de cümle işleme çalışmalarına atıfta bulunmaktadır. -Dir işaretleyicisinin işlenmesinin nasıl gerçekleştiğini ve bu işaretleyiciyi öğrenmede gelişimsel bir model olup olmadığını gösteren daha fazla çalışmanın olması gerektiği sonucuna varılmıştır.

Anahtar Sözcükler: Epistemik kip, -Dir eki, Türkçe, Morfoloji, Dil işleme.

ABSTRACT

This study describes the epistemic modality in Turkish. Epistemic modality markers can be categorized as morphologic markers, lexical markers, and syntactic markers (Kerimoğlu, 2010). This paper focuses on the morphological marker -Dir and compares its modern version with the Old Anatolian Turkish. With reference to this comparison, the possible reasons for the change of the -Dir marker in time are presented. These reasons are suggested to be pronunciation difficulty or vowel flatter. Furthermore, this study refers to the previous theoretical research and empirical research on -Dir marker in Turkish, especially sentence processing studies, as they present real-time processing of language in order to show current tendencies in studying morphological markers. It concludes that there should be more studies to indicate how processing -Dir marker occurs and whether there is a developmental pattern in learning this marker.

Keywords: Epistemic modality, -Dir marker, Turkish, Morphology, Language processing.

INTRODUCTION

This paper introduces epistemic modality in general and continues with the epistemic modality in Turkish. It only focuses on the epistemic morphologic marker *-Dir*. After mentioning the historical development of this marker since Old Anatolian Turkish, it explains why it has changed. The article also covers the previous literature to show how the use of *-Dir* marker has changed over time.

Epistemic modality is a cross-linguistics phenomenon that expresses the probability/possibility or necessity of a pre-existing proposition according to the provided information or evidence (Brogaard & Gatzia, 2017). Epistemic is defined as the “degree of commitment by the speaker to what he says” (Palmer, 1986). Palmer (1986) categorizes the functions of epistemic modality into three: a) speculative that presents uncertainty (may), b) deductive that expresses inference from a piece of observable evidence (must), and c) assumption that reveals an inference from a generally known situation (will). Epistemic modality meaning is expressed via auxiliaries such as may, can, might, and must or adverbials such as perhaps or maybe in English. To define the role of epistemic markers, there should be a context to infer the meaning of the sentence as the related markers have other functions. To illustrate, as in (1a), ‘may’ is an epistemic marker with the meaning of possibility, but there is no specific reference to the evidence or any audience. On the other hand, (1b) refers to an assumption based on some evidence, such as the fact that ‘Jane is not in her office’ may lead to the deductive judgment that she must be at home. In both cases, the speakers should provide the listener with a context to decide the truth value of the proposition.

(1) a) Jane may be at home.

b) Jane must be at home.

While talking about epistemic modality, probability and possibility will be referred interchangeably. However, Kreidler (1998) presents the difference between possibility and probability on a scale in Table 1.

Table 1. Comparison of Possibility and Probability

		POSSIBLE		IMPOSSIBLE				
Apparently True	→	Highly Probable	→	Fairly Probable	→	Slightly Probable	→	Improbable

(Kreidler, 1998, pp. 242)

The difference between the two is that while the possibility factor is a dichotomous term (possible and impossible), probability expresses quantity with various degrees, such as highly probable or slightly probable. The probability includes possibility semantically, and the term probability is used when strong evidence about the event is presented. In Table 2, the classification of the modal verbs based on this scale is presented (Celce-Murcia et al., 1983).

Table 2. Classification of Modal Verbs

Sentences	Degree of Probability
She might/could come tomorrow.	Low
She may come tomorrow.	↕
She should come tomorrow.	High
She will come tomorrow.	

Table 2 illustrates a clear picture of what has been meant in Table 1. As no difference between probability and possibility exists except how they grade the possibility, I will be using possibility in the rest of this article.

The epistemic modality can be expressed in different ways in various languages. This paper focuses on the epistemic modality in Turkish. The following chapter introduces the research questions and the method of the study.

Research Questions

- 1) What is the historical development of epistemic modality marker *-Dir* in Turkish language and how has its usage evolved in time?
- 2) What have previous studies indicated about the acquisition and the use of this specific marker by L1 speakers of Turkish?

METHOD

To conduct a comprehensive review related to the epistemic modality marker *-Dir* in Turkish, I utilized a systematic analysis method on previous literature. Data from various research articles are analyzed in order to define common themes. The following part of the article is organized according to the research questions. It starts with the definition of the suffix and its historical evolvment in time. Later, I present some representative papers from the literature. Lastly, I suggest some ideas for further research.

Epistemic Modality in Turkish

The epistemic modality in Turkish can be expressed through syntactic markers, morphologic markers, and lexical markers (Kerimoğlu, 2010). To begin with, syntactic markers are the phrases such as *sanırım* ‘I think,’ *yanılmıyorsam* ‘If I am not wrong,’ *bana kalırsa* ‘for my part’, *ola ki* ‘suppose that’, *bakmışsın* ‘let us say’ etc. They generally refer to the whole sentence as in (2) and (3).

- | | | | | |
|-----|--------------------------------------------|------|----------|-----------------|
| (2) | Sanırım | Jane | yarın | koş-acak-Ø. |
| | I suppose | Jane | tomorrow | run-FUTURE.3SNG |
| | I suppose Jane will run tomorrow. | | | |
| | | | | |
| (3) | Yanılmıyorsam | Jane | yarın | koş-acak-Ø. |
| | If I am not wrong | Jane | tomorrow | run-FUTURE.3SNG |
| | If I am not wrong, Jane will run tomorrow. | | | |

In addition to syntactic markers, there are also lexical markers of epistemic modality (Kerimoğlu, 2010). These markers are *belki* ‘maybe’, *galiba* ‘presumably’, *herhalde* ‘probably’, *sanki* ‘supposedly,’ etc. The sample sentences are in (4) and (5).

- | | | | | |
|-----|----------------------------------|----------|----------|-----------------|
| (4) | Jane | belki | yarın | koş-acak-Ø. |
| | Jane | maybe | tomorrow | run-FUTURE.3SNG |
| | Jane will maybe run tomorrow. | | | |
| | | | | |
| (5) | Jane | herhalde | yarın | koş-acak-Ø. |
| | Jane | probably | tomorrow | run-FUTURE.3SNG |
| | Jane will probably run tomorrow. | | | |

As in (4) and (5), the lexical marker functions as an adverb in the sentence and expresses uncertainty or ambiguity. In other words, it decreases the certainty provided by the future tense.

Lastly, I mention the morphological markers for epistemic morphology in Turkish. The markers such as *-Abil*, *-sA*, *-mA-sIn*, and *-sA* are used at the end of the verbs as a suffix, and they give the meaning of possibility as illustrated in (6) and (7) (Göksel & Kerslake, 2004; Kornfilt, 1997).

- (6) Jane yarın koş-abilir.Ø.
Jane tomorrow run-POSSIBILITY.3SNG
Jane may run tomorrow.
- (7) Ya Jane yarın koş-ar-sa!
What if Jane tomorrow run-PRESENT-EPISTEMIC
What if Jane runs tomorrow!

In (7), the speaker is unsure whether Ahmet will run or not, so they express the possibility of the event. Therefore, -sA marker functions as uncertainty or possibility.

To decide the meaning of uncertainty or possibility, the test of “definitely” can be applied to the sentences. When *kesinlikle* “definitely” is added to the sentence, if it is grammatical, it means that the sentence has a probability meaning. To exemplify, the sentence in (6) is not grammatical when *kesinlikle* “definitely” is added, which is in line with the idea of uncertainty.

a) -Dir as a Morphologic Epistemic Marker

In this paper, I focus on the morphologic marker *-Dir*. It can be used as a copula with a noun, a suffix following tense-aspect in a verb, or as a formal level marker to present empathic certainty. To talk about copula one, it offers the present tense in third person singular. The sentence in (8) conveys the message of certainty (case of ‘definitely’) or uncertainty (case of ‘probably’).

- (8) Jane ev-de-dir.Ø.
Jane home-LOC-COP/POSSIBILITY. 3SNG
Jane is definitely/probably at home

The case in (8) may create ambiguity in the sentence (Kornfilt, 1997). To remove the ambiguity, it is used with an adverb in the sentence (9) and (10).

- (9) Jane kesinlikle ev-de-dir.Ø.
Jane definitely home-LOC-COP. 3SNG
Jane is definitely at home
- (10) Jane herhalde ev-de-dir.Ø.
Jane probably home-LOC-COP. 3SNG
Jane is probably at home

However, *-Dir* is optional as a copula and can be used as unmarked. When it is used unmarked, it loses its possibility meaning because the copula is obligatory in possibility meaning.

- (11) Jane ev-de.Ø.
Jane home-LOC. 3SNG
Jane is at home.

Secondly, *-Dir* marker expresses the possibility at all levels. It is used with all person markers, including 1st and 2nd person predicates, as opposed to the one utilized in the nominal sentences used with only 3rd person (Göksel & Kerslake, 2004). The sentence in (12) looks like a formal statement referring to Ali’s being a teacher. However, it

also refers to the possibility of Ali's being a teacher if someone sees Ali in the doctor's office. It is ambiguous between two usages, which will be defined through the context.

- (12) Jane doktor ol-muş-tur.Ø.
 Jane doctor become-EVIDENTIAL-EP.COP. 3SNG
 Jane has become a doctor.

-Dir is also used with two types of tenses: future tense and continuous tense. In this respect, it still gives the meaning of assumption, as shown in (13).

- (13) Jane doktora gid-iyor-dur.Ø./gid-ecek-tir.Ø.
 Jane doctor-DAT go-CONT.-EP.COP/ go-FUTURE-EP.COP. 3SNG
 Probably Jane is going/is going to see the doctor.

On the other hand, the copula *-Dir* functions as ungrammatical when it is used with present tense (*-Er*) or past tense (*-DI*) (gel-ir-dir, gel-di-dir) (Kornfilt, 1997). The possible reason for that may be the use of past marker *-DI* signals that the event happened and finished in the past, and there is no place for the possibility (Ergin, 2004).

Historical Development of *-Dir* Marker: The Vowel Change

Regarding the historical development of this marker, Üzüm (2017) examined the use of epistemic morphology in a sample text named *Kisas-i Enbiya* written in old Anatolian Turkish in the 14th century. In (14), there is a sample text from *Kisas-i Enbiya* taken from Üzüm (2017).

- (14) “*Mu ‘āviye ol müşğ ve za ‘ferān pınuđkların alup yıyladı hiç yıyı bulmadı ol er eyitdi çok zamān geçmekden sayalanmışdur.*”

(Yılmaz, et al., 2013, pp. 298/10-12)

As we can see in (14), *-Dir* appears in the form of “*-DUr*, which is an indication that it changed its form in time. It may be about the vowel harmony and its change in time. In this short text, the author means that *Mu ‘āviye* smells the musk and saffron stones and says, *sayalanmışdur*, as there is no scent left. He uses the evidence – no scene – and makes inferences based on the information he obtained indirectly. In other words, its function is to give the meaning of uncertainty or possibility.

The same case is valid for the example sentence in (15). In old Anatolian Turkish, *-Dir* is used in the assumption meaning, but it does not appear with *-i* sound, but *-u* sound.¹

- (15) “*şimdi cānlarda pes ol od yanadur.*”
 “(probably) only that fire is burning in the souls now” (Adamovič, 1985, p: 69)

¹ Ergin (2004) claims that *-dIr* also exists in old Turkish to strengthen the meaning and to give possibility meaning while *-dUr* is used for continuous tense, strengthening the meaning and possibility. I think it is still interesting to find out why it is not used in *-dUr* form anymore.

Another sample sentence takes place in (16). The same pattern about the vowel continues in this sentence too.

(16) “*mâlcugazını getirince nice zahmet çekmişsizdir.*” (Gülsevin, 2007)

When the possible reasons for this change are investigated, I have seen a term called ‘labial harmony’, which decides whether the first vowels should be followed by a rounded and an unrounded vowel (Tosun, 2016). It is a phenomenon in which if Turkish words start with an unrounded vowel, they must continue with an unrounded vowel and if they start with a rounded vowel, they must continue with an unrounded-wide vowel or a narrow-rounded vowel (Efendioğlu & İşcan, 2010). To illustrate, in the example in (15) the word ‘*yanadur*’, the last vowel of the root word is ‘a’, which is an unrounded vowel and ‘u’ is a rounded vowel. Therefore, it does not obey the labial harmony rule, indicating that Old Anatolian Turkish lacks labial harmony (Tosun, 2016). Due to the lack of labial harmony in Old Turkish, unrounded and rounded vowels were not found next to one another. Because of the difficulty, it creates for pronunciation, the pronunciation of some words has become more harmonious via *ünlü düzleşmesi* ‘vowel flattering’. The examples for it can be *altın* >> *altın* “gold” or *ilerü* >> *ileri* “forward” (Gabain, 1988; Korkmaz, 2021; Savran, 2018).

The same pattern can be seen in the sample texts in Old Anatolian Turkish in (14), (15), and (16). The change of vowel in the morphological marker *-Dir* in time could be because of the vowel flattering. With the rules in the Ottoman Turkish and Modern Turkish, *-DUr* has evolved into *-Dir* in order to decrease pronunciation difficulty in verbs existing in Old Anatolian Turkish. I assume that my claim is in line with the proposal mentioned in the previous paragraph. After this proposal on the reason for the change, in the next chapter, I mention the studies which refer to epistemic modality, especially *-Dir* marker.

Studies on *-Dir* Morphological Marker

In the previous chapter, I briefly explain the epistemic modality in Turkish and its categories. Later, I summarize an epistemic morphological marker *-Dir* in Turkish and mention its functions and usage in Turkish. I compare morphological marker *-Dir*’s modern version with the old Anatolian Turkish. To make it clear, I will shortly present the previous literature: what and how they investigate and what they find.

Turkish studies on *-Dir* morphological marker can be categorized into three: studies that focus on the theoretical aspects and its descriptive analysis, and the ones testing the acquisition of epistemic modality by children, and those employing psycholinguistic methods, including sentence processing studies.

Studies that focus on the description of the marker and theoretical aspects emphasize the analysis of the morpheme and describe it as a particle (Savran, 2018). Savran (2008) examined *-Dir* as a particle and its use with indefinite nouns. In the first part of her paper, she focused on the formation of the particle and its history in Turkish dialects. She provided a detailed analysis in which she presented Turkish dialects and sample sentences from these dialects. Secondly, she analyzed the particle used with indefinite nouns and the meaning it brought to the sentence. Although she mentioned many samples from different dialects, the usage of *-Dir* marker in (17) has drawn my attention. She proposed that when a *-Dir* marker is added to a question marker or a specific adverb, it causes uncertainty.

(17) Hanı**dir** onu görmedim. Seni kaç**tır** arıyorum. Niced**dir** görmüyorum onu.
I haven't seen him for a long time. How long have I been looking for you?
I don't see him for a long time. (Savran, 2018, p. 175)

Savran (2008) argued that these sentences have uncertainty, which I partially agree with. Using these sentences in an uncertain situation may depend on the context of sentences following and followed by. I believe the real-time processing of these structures may draw a clear picture of the case. In line with this, in his dissertation, Özalan

(2014) mentioned different types of the copula, including the marker *-Dir*. He focused on the grammatical category as different from Savran (2008). I suppose this is also a nice resource to compare the usage of *-Dir* in historical and modern texts as a copula. Nevertheless, he did not mention the function of *-Dir* as a probability marker because he thought that the factor defining its function is the context and not related to his dissertation.

There are also some studies examining children and their acquisition of epistemic construction, *-Dir* marker. The studies demonstrated that the children's systematic use of *-Dir* as an epistemic marker begins at around four or four and a half years old. However, its function as a factive marker or information seeker (*Bu nedir baba? What is this, dad?*) is produced later than the epistemic marker (Aksu-Koç, 1998). Nevertheless, Altan (2009) stated that in her study testing the acquisition of *-Dir* with two different functions (factive and non-factive), she did not reach the result that epistemic marker is acquired before although she collected data via Chiles natural language database and elicited production task from 2 to 5 years old Turkish children. Therefore, this acquisition issue is controversial, and more studies should be conducted to clarify it.

Furthermore, some acquisition studies evaluate the acquisition of epistemic modality in the interface of evidentiality (Aksu-Koç & Alıcı, 2000). Aksu-Koç and Alıcı (2000) collected data from 3-6 years old Turkish children to check the processing of the direct evidential (*-DI*) and epistemic marker (*-Dir*). They tested whether children could distinguish the degree of certainty of the epistemic marker and the direct evidence by direct evidentiality marker. Their findings showed that children could equally judge the fact that when they see a direct evidential marker, it expresses a kind of evidence. When they engage with the epistemic marker, they can comprehend the degree of certainty. These findings may be an indication of the fact that acquisition of epistemic markers and direct evidential markers occur equally similar times in Turkish children.

There are also some studies referring to psycholinguistics methods. However, the number of studies conducted on epistemic modality is scarce (Arslan, 2020; Tosun & Vaid, 2018). The studies have been conducted on the evidentiality-epistemic modality interface. For example, a recent study by Tosun and Vaid (2018) examined the relationship between modality and evidentiality via offline sentence interpretation tasks from Turkish and English speakers. In other words, the authors presented the past events in sentences marked with epistemic modality (categories: possibility, probability, and necessity) and evidentiality (categories: hearsay, conjecture, inference, and assumption). The participants were asked to decide the source judgments of the sentences or stance (confidence) judgments of the sentences. They have found the lowest certainty rate in the sentence with hearsay (*-mİş*) and assumption (*-Dir*). Based on the findings, they suggested that epistemic modality and evidentiality overlap, but their function is not the same for English and Turkish speakers. Another psycholinguistic study on epistemic modality was conducted by Arslan (2020), who examined the extent to which epistemic uncertainty affects the processing of grammatical evidentiality. Although she conducted four different studies, I mention only two of them for the sake of this paper. The last two tasks were a self-paced reading task, at the end of which participants were asked about the acceptability of the experimental sentence and an acceptability judgment task. In the first experiment I mention, the participants saw a contextual sentence in which lexical markers of epistemic modality such as *eminim* 'I am sure' and *sanırım* 'I think' were included. There were two factors: the owner of the information (first person vs. third person) and the epistemic certainty (high 'I am sure', and low 'I think'). There were four conditions in total. The conditions were as follows:

(18) "High/Low epistemic certainty in first person context

a) Ben onun balığı yakaladığımı gördüğüme eminim/gördüğümü sanıyorum.

Hilmi balığı yakaladı piknikten önce.

I am sure/I suppose that I have seen him catching the fish. Hilmi caught the fish before the picnic.

b) High/Low epistemic certainty third person reported context

Merve onun balığı yakaladığını gördüğüne emin/gördüğünü sanıyor.

Hilmi balığı yakalamış piknikten önce.

Merve is sure/Merve supposes that she has seen him catching the fish. Hilmi caught the fish before the picnic.” (Arslan, 2020, pp. 10)

In this self-paced reading task, the findings indicated that first-person and low certainty were the least acceptable because they used direct evidentiality marker *-DI* in context with the first person. The final experiment presented evidence-neutral contexts with the same items on a sentence completion task. They provided three different options for the completions, including direct evidential, indirect evidential, and indirect assumption. The findings showed that when the high probability was given, they chose the direct evidential, and when they were provided low probability, they chose the inferred evidential. In brief, at the end of all experiments, she concluded that the sensitivity of Turkish speakers to uses of evidentiality is affected by the ‘uncertainty of the informant.’ The reaction of the Turkish speakers to the experimental conditions (first-person vs. non-first-person and owner’s uncertainty) mediates the interface between epistemic modality and evidentiality in Turkish.

To summarize this chapter, although there are many descriptive studies on the epistemic morphologic marker *-Dir*, some research is required in child acquisition in the first language and real-time processing of *-Dir*.

CONCLUSION

This paper discusses the epistemic modality and its different markers. It focuses on the morphological marker *-Dir* and compares its modern version with the old Anatolian Turkish. It concludes that the possible cause of the change of *-DUR* in Old Anatolian Turkish into *-Dir* in Ottoman Turkish and Modern Turkish is to decrease pronunciation difficulty. In order to make the pronunciation easier, the structure has evolved into *-Dir* in time. In other words, the reason for the change emerges from pragmatic factors. Another reason for the change may be about phonological factors. The source of the change is to provide vowel harmony. The vowel harmony contributes to the language's overall regularity, predictability, and efficiency. To achieve these aims, it has changed as *-Dir* in time. In addition to enlightening the evolution of the markers phonologically, the paper refers to the previous theoretical and empirical research on epistemic modality, especially *-Dir* marker. It suggests that more studies should be conducted to show how a speaker can process epistemic modality. To provide the data with real-time-processing, most psycholinguistic methods, such as self-paced-reading tasks, event-related tasks or eye-tracking tasks, should be utilized. Moreover, researchers should focus on the language acquisition of children as they provide evidence about acquisition from very early ages of acquisition.

CONFLICT OF INTEREST

There is no personal or financial conflict of interest between the authors of the article within the scope of the study.

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