THE ANATOMY OF A FORCE VARIABLE MODAL IN TURKISH

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ABSTRACT

The Anatomy of a Force Variable Modal in Turkish

This thesis explores the intricate nature of the *-DIr* suffix in Turkish, detailing its dual function as a fact-reporting suffix and a force variable epistemic modal. The main goal of this thesis is to describe the quantificational variation of *-DIr* as an epistemic modal and account for it through the framework of formal semantics. I compare *-DIr* with modals from other languages which display quantificational variation and explore semantic accounts proposed for the quantificational variation of these modals. In order to account for the quantificational variation of *-DIr*, I adapt Peterson's (2009) proposal for the force variability of Gitskan and St'a´t'imcets modals to *-DIr*, utilizing the modal base and the ordering source. By comparing *-DIr* with the aorist *-I/Ar*, I propose that these forms are allomorphs of a singular morpheme due to their complementary distribution in morphosyntactic environments which they are used in, their alignment of functions, and their quantificational variation as epistemic modals.

ÖZET

Türkçede Kuvvet Değişkenli Bir Kipin Anatomisi

Bu tez, Türkçedeki *-DIr* ekinin ilginç doğasını araştırmakta ve bu ekin bir olgu bildirme eki ve kuvvet değişkenli bir epistemik kip olarak ikili işlevini detaylandırmaktadır. Bu tezin temel amacı *-DIr*'ın gereklilik ve olasılık arasında değişkenlik gösteren epistemik bir kip olarak tanımlamak ve bunu biçimsel anlambilim çerçevesinde açıklamaktır. Tez, *-DIr*'ı diğer dillerdeki niceliksel değişkenlik gösteren kiplerle karşılaştırmakta ve bu kiplerin niceliksel değişkenliğini açıklamak için önerilen anlambilimsel açıklamaları incelemektedir. *-DIr*'ın niceliksel değişimini açıklayabilmek için, Peterson'ın (2009) Gitskan ve St'a't'imcets kipsel ifadelerinin kuvvet değişkenliği üzerine olan önerisi, *modal base* ve *ordering source* kavramlarından yararlanarak *-DIr*'a uyarlanmıştır. *-DIr*'ı *-I/Ar* eki ile karşılaştırarak, bu formların, kullanıldıkları morfosentaktik ortamlarda tamamlayıcı dağılımları, kullanımlarının birbiriyle paralel olması ve epistemik kipler olarak niceliksel değişkenlik göstermeleri nedeniyle tek bir morfemin allomorfları olduğu öne sürülmektedir.

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ABBREVIATIONS

1	first person
2	second person
3	third person
3S2O	third person subject to second person object
ABL	ablative
ACC	accusative
AOR	aorist
AUX	auxiliary verb
BPG	best possible grounds
CAUSE	causative
CN	common noun
COND	conditional
COP	copula
CV	converb marker
DAT	dative
DEP	deprivative
DET	determiner
EV	evidential
FUT	future
GEN	genitive
IMP	imperative
IMPF	imperfective
INT	interrogative

LOC	locative
MOD	modal
NEG	negative
OBLG	obligative
OPT	optative
PASS	passive
PF	perfective
PL	plural
POSS	possessive
PROG	progressive
PST	past
REP	reportative
SG	singular
SUB	subordinator
TAM	tense/aspect/modality
TOP	topic
VN	verbal noun marker

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CHAPTER 1

INTRODUCTION

The aims of this thesis are to describe the functions of *-DIr* in Turkish as a fact-reporting suffix and a force variable epistemic modal, to provide a formal semantic analysis for the force variability of the epistemic *-DIr*, and to compare *-DIr* with the aorist *-I/Ar* in order to support the idea that they are allomorphs of the same morpheme.

In Chapter 2, I give a general overview of *-DIr*, its functions, and its morphosyntactic distribution. *-DIr* is a polyfunctional suffix that can be used to report a fact or express epistemic modality. Fact-reporting function of *-DIr* consists of stating facts, expressing generalizations/habituals, and establishing authority.

(1) Amasya Karadeniz Bölge – si – nde – dir.
Amasya Black Sea region – POSS.3SG – LOC – DIr.
'Amasya is in the Black Sea Region.'

(2) Ayşe genel – de bu saat – te ev – de – dir.
Ayşe general – LOC this hour – LOC home – LOC – DIr
'Ayşe is usually home at this hour.'

(3) Bu konu bura – da kapa – n – mış – tır.
this subject here – LOC close – PASS – PF – DIr
Lit: 'This subject is finished here.' (A colloquial phrase used to end an argument.)

The epistemic *-DIr*'s quantificational force is variable; hence, it can have both universal and existential readings depending on the context in which it is used.

This is apparent from the fact that sentences with *-DIr* may be used with adverbials which mean *definitely* or adverbials which mean *possibly*.

(4) Ali kesin/mutlaka/muhakkak ev – de – dir.
Ali definitely home – LOC – DIr
'Ali must be home.'

(5) Ali belki/herhalde/muhtemelen ev – de – dir.
Ali possibly home – LOC – DIr
'Ali might be home.'

While the fact-reporting and epistemic meanings of *-DIr* can clearly be distinguished in certain morphosyntactic environments, these two meanings may clash in some environments, leading to ambiguity. When attached after bare non-verbal predicates, the future marker *-EcEk*, and the perfective marker *-mIş*, *-DIr*'s meaning may be ambiguous between fact-reporting and epistemic modal. However, when attached after the imperfective markers *-(I)yor* and *-mEktE* and the obligative marker *-mAlI*, it is non-ambiguous.

(6) a. non-verbal predicates:
Sena uzun – dur.
Sena tall – DIr
(i) 'Sena is tall.'
(ii) 'Sena might/must be tall.'
Nisa öğrenci – dir.
Nisa student – DIr
(i) 'Nisa is a student.'
(ii) 'Nisa might/must be a student.'

b. *-mIş*:

Yemek gel – miş – tir.

food come – PF – DIr

(i) ‘The food has arrived.’

(ii) ‘The food might/must have arrived.’

e. *-EcEk*:

Festival İstanbul – da ol – acak – tır.

festival İstanbul – LOC hold – FUT – DIr

(i) ‘The festival will be held in İstanbul.’

(ii) ‘The festival might/must be held in İstanbul.’

c. *-(I)yor*: (only epistemic)

Otobüs gel – iyor – dur.

bus come – IMPF – DIr

‘The bus must/might be coming.’

d. *-mEktE*: (only fact-reporting)

Şair bura – da yaşa – makta – dır.

poet here – LOC live – IMPF – DIr

‘The poet lives here.’

f. *-mAlI*: (only fact-reporting)

Öğrenci – ler forma giy – meli – dir.

student – PL uniform wear – OBLG – DIr

‘The students must wear uniforms.’

In Chapter 3, I discuss the previous claims which state *-DIr* is an epistemic modal and claims which state it is an illocutionary operator. I compare *-DIr* with other modals in Turkish and discuss their similarities and differences. I discuss the

force variable modals from other languages and compare them with *-DIr*. Finally, I argue that Peterson's (2009) proposal on the force variable Gitskan modal can be applied to *-DIr* as an epistemic modal.

I apply tests adapted from Faller (2002) and Matthewson, Davis, and Rullmann (2007) to sentences with *-DIr* in order to explore whether *-DIr* is an illocutionary operator or an epistemic modal. I argue that *-DIr* is an epistemic modal and not an illocutionary operator according to the results of the tests.

I compare and contrast *-DIr* with other modal markers in Turkish in order to highlight the differences and similarities between them. Turkish has other epistemic modals which do not display variation with their quantificational force. The modal *-(y)Abil* may only express existential quantification whereas the modal *-mAlI* may only express universal quantification. Applying some tests and comparing *-DIr* with these modals, I argue that *-DIr* shows parallelism with *-mAlI* in its use instead of *-(y)Abil*. As a result, I claim that the default force of *-DIr* is universal.

According to Peterson (2009), force variable modals in languages such as Gitskan and St'a´t'imcets have default quantificational force as either universal or existential. However, modals which have default universal force can be weakened to express existential quantification, and modals which have default existential force can be strengthened to express universal force. Peterson (2009) analyzes the modals as in Kratzer (1991, 2002), taking them to make quantification over possible worlds, which are determined by a modal base and an ordering source. He claims that the ordering source of the force variable modals is empty by default, and when the ordering source is empty, the modal expresses its default quantification. On the other hand, if the ordering source is non-empty, the modal's force is strengthened or weakened depending on the language.

Peterson (2009) claims that Gitskan modal *ima*'s force is existential by default, and the force of the St'a´t'imcets modals is universal by default. Drawing from this typology, I argue that the default force of *-DIr* is universal by default, but it can be weakened through the ordering source.

In Chapter 4, I compare *-DIr* with the so-called aorist marker *-I/Ar*. The functions of *-I/Ar* and *-DIr* show parallelism in many ways. Similar to *-DIr*, *-I/Ar* can be used as a fact-reporting suffix and as an epistemic modal. Moreover, *-I/Ar* displays force variability in its epistemic use, like *-DIr*.

(7) Fact-reporting:

Avokado	tropik	iklim – de	yetiş – ir.
avocado	tropical	climate – LOC	grow – AOR

'Avocado grows in tropical climates.'

(8) Epistemic:

Sipariş – iniz	belki/kesin	yarın	gel – ir.
order – POSS.2PL	possibly/definitely	tomorrow	come – AOR

'Your order might/must come tomorrow.'

I argue that *-DIr* and *-I/Ar* are allomorphs based on the alignment of their functions, their parallel use as generics, and their use with Kelepir's (2001) Group 1 and Group 2 tense-aspect-mood (TAM) markers. I show that *-DIr* and *-I/Ar* are in complementary distribution according to Kelepir's (2001) categorization, with *-DIr* being used with Group 1 TAM markers and *-I/Ar* being used with Group 2 TAM markers. Furthermore, I adapt Özgen's (2021) proposal in order to account for the generic and epistemic readings of *-DIr* and *-I/Ar*.

In Chapter 5, I summarize my findings, discuss some open questions, and conclude the thesis.

CHAPTER 2

OVERVIEW OF *-DIr*'S FUNCTIONS AND MORPHOSYNTAX

2.1 Introduction

The suffix *-DIr* of Turkish has some peculiar properties. All previous works on *-DIr* agree that *-DIr* is a polyfunctional suffix. Sansa (1986) claims that *-DIr* has "factive" and "non-factive" uses. Underhill (1976) proposes that *-DIr* is used to emphasize the truth of a statement, or in spoken language, it is used to express assumptions of the speaker based on the evidence. Kornfilt (1997) distinguishes between these uses as "1. used at a formal, even official, stylistic level, to express emphatic certainty; 2. used at all levels (but perhaps preferred colloquially), to express inferred probability." Göksel and Kerslake (2005) define the uses of *-DIr* as "a generalization, general rule, or statement of principle" or "an assumption or hypothesis".

Karakoç (2014), on the other hand, argues that *-DIr*'s function does not concern factivity; instead, it is a stance morpheme which conveys "the speaker's knowledge of a state of affairs". Thus, rather than factivity as a function of the suffix, Karakoç claims *-DIr*'s contribution to the meaning is either "presumption" or "confirmation of an assertion".

Even though the authors who describe *-DIr*'s function use different terminology, they agree that there are two primary functions of *-DIr*. I will categorize these functions as (i) fact-reporting function and (ii) epistemic function. *-DIr* in the sentence in (1) can be used to simply report the fact that the restaurant's food is tasty, but *-DIr* can also contribute an epistemic meaning, i.e. based on what the speaker knows about the restaurant (maybe they read the google reviews or they have seen

the Instagram page of the chef that works there, etc.), they assume that the restaurant's food is tasty.

(1) Bu lokanta – nın yemek – ler – i lezzetli – dir.
this restaurant – GEN food – PL – POSS3 tasty – DIr
(i) 'I presume that the food at this restaurant is tasty.' (epistemic)
(ii) 'It is a fact that the food at this restaurant is tasty.' (fact-reporting)
(Karakoç, 2014)

Moreover, epistemic *-DIr* has distinct readings as well. It is possible to modify verbs marked with *-DIr* both with adverbials such as *mutlaka/kesin/muhakkak/...* (all of which can roughly be translated as *definitely*) and with adverbials such as *belki/muhtemelen/herhalde/...* (all of which can roughly be translated as *possibly*). Therefore, *-DIr* appears to be compatible both with universal and existential quantification as an epistemic modal.

(2) a. Bu lokanta – nın yemek – ler – i belki lezzetli –
this restaurant – GEN food – PL – POSS3 possibly tasty –
dir.
DIr
'The food at this restaurant might be tasty.'

b. Bu lokanta – nın yemek – ler – i kesin lezzetli –
this restaurant – GEN food – PL – POSS3 definitely tasty –
dir.
DIr
'The food at this restaurant must be tasty.'

I describe the fact-reporting and epistemic functions of *-DIr* in detail in Section 2.2. I explore the morphosyntactic environments in which *-DIr* can or cannot

appear and what meanings are possible with the combination of *-DIr* and other TAM markers of Turkish in Section 2.3.

2.2 Functions of *-DIr*

2.2.1 Fact-reporting function of *-DIr*

-DIr is used to express "factivity", "the truth of a statement", "emphatic certainty", "a generalization, general rule, or statement of principle", or "confirmation of an assertion" in its fact-reporting function (Sansa, 1986; Underhill, 1976; Kornfilt, 1997; Göksel & Kerslake, 2005; Karakoç, 2014). There are three main uses of *-DIr* in the fact-reporting function: (i) stating facts, (ii) making generalizations/talking about habits (characterizing generics), and (iii) establishing authority. The stating-facts function of *-DIr* is most typical in textbooks and other types of formal discourse. Examples of this type are shown in (3) and (4).

(3) Atatürk Türkiye Cumhuriyeti – nin kurucu – su – dur.
Atatürk Turkey republic – GEN founder – POSS.3SG – DIr
'Atatürk is the founder of the Republic of Turkey.'

(4) Bu tesis – te elektrik üret – il – mekte – dir.
this facility – LOC electricity produce – PASS – IMPF – DIr
'Electricity is being produced in this facility.'

The examples in (5) and (6) illustrate the making generalizations and talking about habits functions of the suffix. In formal terms, these uses may be referred to as characterizing generics, which make generalizations over events or generalizations based on properties of individual objects (Krifka et al., 1995). (See Chapter 4 for more about *-DIr* in generic sentences.)

(5) Genel olarak dikkatli bir şoför – sün – dür de.
general as careful a driver – COP.3SG – DIr also
'And in general, you are a careful driver.' (Sansa, 1986)

(6) Bu ev – i her zaman sev – miş – im – dir.
this house – ACC every time like – PF – 1SG – DIr
'I have always liked this house.' (Sansa, 1986)

Finally, *-DIr* is used to establish authority. In this use of *-DIr*, the utterance of the speaker does not have to express a fact or an objective statement. Rather, by uttering a sentence with *-DIr,* the speaker tries to establish their authority in the conversation.

(7) Bu konu bura – da kapa – n – mış – tır.
this subject here – LOC close – PASS – PF – DIr
Lit: 'This subject is finished here.' (A colloquial phrase used to end an argument.)

(8) Yanlış bil – iyor – sun, yemek – ler - i en lezzetli
wrong know – IMPF – 2SG food – PL – ACC most tasty
ülke İtalya – dır.
country Italy – DIr
'You are wrong, the country with the tastiest food is Italy.'

2.2.2 Epistemic function of *-DIr*

In its epistemic function, *-DIr* is used to express "non-factivity", "assumptions of the speaker based on the evidence", "inferred probability", "an assumption or hypothesis", or "presumption" (Sansa, 1986; Underhill, 1976; Kornfilt, 1997; Göksel & Kerslake, 2005; Karakoç, 2014).

As previous work has established, *-DIr* is used to express statements based on inference or indirect evidence in its epistemic sense. If one has direct evidence of a proposition *P*, it would not be appropriate to say '*P -DIr*'.

(9) Ali Ayşe – yi öp – müş – tür, #gör – dü – m.
Ali Ayşe – ACC kiss – PF – DIr see – PST – 1SG
'Ali might/must have kissed Ayşe, I saw it.'

What is interesting about the epistemic function of *-DIr* is that it displays variability in quantificational force. It seems to be able to express either universal quantification similar to English *must* or existential quantification similar to English *might*. This is apparent from the fact that utterances with *-DIr* can be modified both with adverbs meaning *definitely* and with adverbs meaning *possibly*. They can also be modified with *inşallah* (God willing), *Allah bilir* (God knows), and *umarım* (hopefully), all of which contribute a sense of uncertainty to the statement.

(10) Ali kesin/mutlaka/muhakkak ev – de – dir.
Ali definitely home – LOC – DIr
'Ali must be home.'

(11) Ali belki/herhalde/muhtemelen ev – de – dir
Ali possibly home – LOC – DIr
'Ali might be home.'

(12) Allah bilir/inşallah/Umarım Ali ev – de – dir.
God knows/God willing/hopefully Ali home – LOC – DIr
'God knows/God willing/Hopefully, Ali is home.'

2.3 Morphosyntactic distribution of *-DIr*

The suffix *-DIr* can be attached to non-verbal predicates as well as some aspectually modified verbal stems. In non-verbal predicates, *-DIr* is simply suffixed to the predicate stem. In verbal predicates, on the other hand, *-DIr* follows the perfective marker *-mIş*, the imperfective markers *–(I)yor* and *-mEktE*, the future tense marker *-EcEk*, and the obligative *-mAlI*.

(13) a. non-verbal predicates:

Sena uzun – dur.

Sena tall – DIr

(i) 'Sena is tall.'

(ii) 'Sena might/must be tall.'

Nisa öğrenci – dir.

Nisa student – DIr

(i) 'Nisa is a student.'

(ii) 'Nisa might/must be a student.'

b. *-mIş*:

Yemek gel – miş – tir.

food come – PF – DIr

(i) 'The food has arrived.'

(ii) 'The food might/must have arrived.'

e. *-EcEk*:

Festival İstanbul – da ol – acak – tır.

festival İstanbul – LOC hold – FUT – DIr

(i) 'The festival will be held in İstanbul.'

(ii) 'The festival might/must be held in İstanbul.'

c. *-(I)yor*: (only epistemic)

Otobüs gel – iyor – dur.

bus come – IMPF – DIr

'The bus must/might be coming.'

d. *-mEktE*: (only fact-reporting)

Şair bura – da yaşa – makta – dır.

poet here – LOC live – IMPF – DIr

'The poet lives here.'

f. *-mAlI*: (only fact reporting)

Öğrenci – ler forma giy – meli – dir.

student – PL uniform wear – OBLG – DIr

'The students must wear uniforms.'

-DIr cannot co-occur with the past marker *-DI*, the so-called aorist *-I/Ar*, and the conditional *-sE*.

(14) a. *-DI*:

Kar yağ – dı – (*dır).

snow snow – PST – (*DIr)

'It snowed.'

b. *-I/Ar*:

Kar yağ – ar – (*dır).

snow snow – AOR – (*DIr)

'It snows.'

c. *-sE*:

Kar yağ – ıyor – (*dur) – sa git – me.

snow snow – IMPF – (*DIr) – COND go – NEG

'If it is snowing, don't go.'

2.3.1 Possible meanings under different combinations with *-DIr*

Even though *-DIr* seems totally ambiguous between a fact-reporting and an epistemic reading at first glance, some aspectual markers' combination with *-DIr* does not allow certain readings to survive. In this section, I examine and exemplify *-DIr*'s interaction with other TAM markers.

-DIr may be interpreted ambiguously when it is attached to non-verbal predicates and the perfective marker *-mIş*.

(15) a. non-verbal predicates:

Zeynep iyi bir aşçı – dır.

Zeynep good one cook – DIr

(i) '(It is a fact that) Zeynep is a good cook.'

(ii) 'Zeynep might be a good cook.'

(iii) 'Zeynep must be a good cook.'

b. *-mIş*:

Çöp – ler – i belediye topla – mış – tır.

garbage – PL – ACC municipality collect – PF – DIr

(i) '(It is a fact that) the municipality collected the garbage.'

(ii) 'The municipality might have collected the garbage.'

(iii) 'The municipality must have collected the garbage.'

The suffix *-mIş* has two main functions. It can either express perfective aspect (i.e., when it precedes the past tense marker as in (16)a) or evidential marking (i.e., when it follows an overt aspect marker as in (16)b), or in some cases, it can express both (i.e., when it directly attaches to the verb as in (16)c). However, when *-DIr* follows *-mIş*, *-mIş* cannot express evidentiality but can only express perfective aspect, as shown in (16)d.

(16) a. only perfective:

Ev – e gel – diğ – im – de bebek uyu – muş – tu.

home – DAT come – CV – POSS.1SG – LOC baby sleep – PF – PST

'When I came home, the baby had already fallen asleep.'

b. only evidential:

Sessiz ol. Bebek uyu – yor – muş.

quiet AUX baby sleep – IMPF – EV

'Be quiet. (Apparently) the baby is sleeping.'

c. perfective and evidential:

Bebek uyu – muş.

baby sleep – PF/EV

'Apparently, the baby has fallen asleep.'

d. only perfective with *-DIr*:

Bebek uyu – muş – tur.

baby sleep – PF – DIr

'The baby might/must have fallen asleep.'

*'Apparently, the baby might/must have fallen asleep.'

The fact that *-mIş* cannot express evidentiality with *-DIr* is also apparent in (17). When *-mIş* is attached after an aspectual marker, *-DIr* or *-DI* cannot follow it.

Kelepir (2001) explains that there are basically two different *-mIş* suffixes in Turkish. She argues that *-mIş*, which attaches after aspectual markers actually attaches to a null copula, and it expresses evidentiality. On the other hand, *-mIş*, which attaches to the bare verb and before the past marker *-DI*, is itself an aspectual marker that has a copula after itself; thus, it expresses perfective aspect. Since *-DIr* is attached as the last suffix to the verb, it is clear that it attaches to the copula. This is why in the combination of *-mIş* and *-DIr*, *-mIş* can only express perfective aspect. This matter is discussed more in detail in Chapter 4.

(17) Bebek uyu – yor – muş – (*tur).[1]

baby sleep – IMPF – EV – (*DIr)

Intended: 'The baby might/must have been falling asleep.'

The future marker *-EcEk*'s use is very limited in the fact-reporting reading with only a few examples describing generalized situations in which 'Whenever x happens, y will happen.' as in (18) or with the establishing authority function as in (19).

(18) Işık o ayna – ya, o ayna – dan da ikinci ayna –

light that mirror – DAT that mirror – ABL also second mirror –

ya yansı – yacak – tır.

DAT reflect – FUT – DIr

'The light will reflect on that mirror and from that mirror on the second one.'

(Sansa, 1986)

[1] In some dialects of Turkish, this sentence may be judged as grammatical, but not in the standard dialect.

(19) Hiçbir suç ceza – sız kal – ma – yacak – tır.

no crime punishment – DEP stay – NEG – FUT – DIr

'No crime will be left unpunished.' (Temürcü, 2004)

While Sansa (1986) also emphasizes that the combination of *-EcEk* and *-DIr* is more commonly used in the epistemic reading than the fact-reporting reading, it is not impossible to get an ambiguous reading with *-EcEk* + *-DIr* combinations. For example, (20) and (21) display that in different contexts, it is possible to get both readings.

(20) (security warning the people at the ceremony area)

Tören bura – da yap – ıl – acak – tır. Lütfen alan –

ceremony here – LOC conduct – PASS – FUT – DIr please area –

ı boşalt – ın.

ACC clear – IMP.2PL

'The ceremony will be conducted here. Please clear the area.'

(21) (upon seeing the preparations)

Sahne bura – ya kur – ul – muş. Tören bura – da

stage here – DAT set – PASS – PF/EV ceremony here – LOC

yap – ıl – acak – tır.

conduct – PASS – FUT – DIr

'The stage has been set here. (I guess) the ceremony will be conducted here.'

While *-DIr* can be ambiguously used between a fact-reporting and an epistemic reading with non-verbal predicates, *-mIş*, and *-EcEk*, it is non-ambiguous when attached after *-(I)yor*, *-mEktE*, and *-mAlI*.

-DIr cannot co-occur with the progressive marker *-(I)yor* in the fact-reporting reading.[2] Sansa (1986) claims that when sentences with *-(I)yor* take *-DIr*, they become "non-factive". On the other hand, *-DIr* can co-occur with the other progressive marker *-mEktE* in the fact-reporting reading, but it cannot in the epistemic reading. There seems to be a complementary distribution between the progressive markers in terms of their occurrence with *-DIr*.

(22) Bu tesis – te elektrik üret – il – mekte – dir.
this facility – LOC electricity produce – PASS – IMPF – DIr
'It is a fact that electricity is being produced in this facility.'
*'I presume that electricity is being produced in this facility.'

(23) Bu tesis – te elektrik üret – il – iyor – dur.
this facility – LOC electricity produce – PASS – IMPF – DIr
'I presume that electricity is being produced in this facility.'
*'It is a fact that electricity is being produced in this facility.'

[2] Apart from its fact-reporting and epistemic functions, *-DIr* also has an emerging function that has recently appeared on social media. This function has surfaced in a meme-like context, typically accompanied by a photo or a video. It is used to narrate the state in which the speaker is or was, with the visual typically adding the humor component. In this social media use, it is possible to use *-(I)yor* with *-DIr* in a non-epistemic sense as well as other combinations which seem odd in the standard spoken language.

(i) Yine bir gün sahil – de dolaş – ıyor – um – dur.
again one day beach – LOC wander – IMPF – 1SG – DIr
'One day, I am wandering again on the beach.'

It is not clear whether this new use represents a true change of function or if it is simply highlighting or extending an existing (sub-)function. If there is true semantic change, how much do speakers draw from the original meanings of *-DIr*?
In connection with this emerging use of *-DIr*, more questions arise regarding the topic of how the functions of certain linguistic forms are influenced and changed by practices on social media and how these novel meanings evolve semantically. This new function of *-DIr* is not explored in detail as it is outside the scope of this thesis; however, it is a very promising topic that needs further research.

Finally, the necessity marker *-mAlI* and *-DIr* only express a fact-reporting reading. As Sansa (1986) emphasizes, while *-mAlI* by itself can be ambiguous between a deontic and epistemic reading, *-DIr* cancels out the epistemic reading and only allows *-mAlI*'s reading to be deontic. The epistemic reading of *-DIr* is cancelled out with *-mAlI* + *-DIr* combinations as well. Therefore, whenever *-DIr* follows *-mAlI*, *-mAlI*'s function can only be expressing deontic necessity while *-DIr*'s function can only be fact-reporting.

(24) a. Çorba sıcak ol – malı.
soup hot AUX – OBLG
'The soup must be hot.' (deontic and epistemic)

b. Çorba sıcak ol – malı – dır.
soup hot AUX – OBLG – DIr
'The soup must be hot.' (deontic) (Sansa, 1986)

In this section, I have discussed *-DIr*'s interaction with other suffixes. I have shown that *-DIr* can be interpreted ambiguously between a fact-reporting and an epistemic reading when it is used with non-verbal predicates, *-mIş*, and *-EcEk* while its function can be non-ambiguous as either fact-reporting or epistemic when it follows *-(I)yor*, *-mEktE*, and *-mAlI*. We have also seen that *-DIr* cannot co-occur with *-DI*, *-I/Ar*, and *-sE*.

2.4 Summary of noteworthy findings

In this chapter, I have briefly described *-DIr*'s functions. The two main functions of *-DIr* are fact-reporting and epistemic modality. I have shown that the fact-reporting *-DIr* is divided into three sub-categories which are used to state facts, make generalizations and talk about habits (characterizing generics), and establish

authority. *-DIr* as an epistemic modal, on the other hand, displays force variability. It can be used as a strong or a weak modal depending on the context and the existence of adverbial modification.

I have shown that the two functions of *-DIr* differ in their interpretation in some cases but are ambiguous in others. When *-DIr* attaches after a bare non-verbal predicate, the perfective marker *-mIş*, and the future marker *-EcEk*, it can be ambiguous between a fact-reporting and an epistemic reading. I have shown that when *-DIr* attaches after *-mIş*, *-mIş* can only be interpreted as perfective aspect, but not as evidential.

When *-DIr* attaches after the imperfective markers *-(I)yor* and *-mEktE* and the obligative marker *-mAlI*, it is non-ambiguous. In the combination of *-(I)yor* and *-DIr*, *-DIr* can only be interpreted as an epistemic modal while in the combination of *-mEktE* and *-DIr*, it can only express fact-reporting. Therefore, I have argued that the imperfective markers are in complementary distribution in their usage with *-DIr*. In the combination of *-mAlI* and *-DIr*, both *-mAlI* and *-DIr* lose their epistemic reading; hence, *-mAlI* can only be interpreted as a deontic modal, and *-DIr* can only express fact-reporting. Table (1) summarizes *-DIr*'s use with TAM markers.

Table 1. TAM Markers and Their Use with *-DIr*

TAM Markers with Ambiguous *-DIr*	TAM Markers with Fact-Reporting *-DIr*	TAM Markers with Epistemic *-DIr*	TAM Markers not Compatible with *-DIr*
• -mIş • -EcEk	• -mAlI • -mEktE	• -(I)yor	• -I/Ar • -DI • sE

CHAPTER 3

-DIr AS AN EPISTEMIC MODAL

3.1 Introduction

In this section, I compare *-DIr* with linguistic expressions that seem similar in function in other languages in order to figure out where *-DIr* stands cross-linguistically. I evaluate the claims which were made in previous research on *-DIr* and examine whether it belongs in the category of epistemic modals or illocutionary operators. I claim that *-DIr* is an epistemic modal based on the results of a number of tests adapted from Faller (2002) and Matthewson et al. (2007). I also examine and contrast *-DIr* with other epistemic modals from Turkish to get a better understanding of its use language internally. Finally, I implement Peterson's (2009) analysis on the Gitskan modal *ima* and St'a´t'imcets modals in order to provide a formal semantic analysis for *-DIr*.

3.2 Justifying *-DIr* as an epistemic modal

The suffix *-DIr*, in its epistemic use, was taken to be either a modality marker or an illocutionary force marker by authors who worked on *-DIr* previously. While most of the early works defend the idea that *-DIr* is a modality marker, in more recent works, it has started to be called an illocutionary marker. Erguvanlı Taylan (2018) explains that *-DIr* is the final suffix to attach to the verb even after the person markers and the question particle *-mI*. Therefore, she claims *-DIr* is outside the verbal scope, and it is a marker which represents the illocutionary force scoping over the whole sentence. Yangın (2020) also claims that *-DIr* corresponds to the highest projection of Rizzi & Cinque's (2016) TAM cartography; thus, it is an illocutionary marker. In this section, I apply a number of tests adapted from Faller (2002) and Matthewson et al. (2007)

and demonstrate that *-DIr* is, in fact, an epistemic modal, contra the illocutionary marker analysis proposed in Erguvanlı Taylan (2018) and Yangın (2020).

Previous research shows that cross-linguistically, it is possible for an evidential marker to fall under the category of either epistemic modal or illocutionary marker. Faller (2002) employs a number of tests in order to determine whether the evidentials of Cuzco Quechua are epistemic modals or illocutionary operators. Based on her empirical findings, she concludes that the evidential enclitics of Quechua are, in fact, illocutionary modifiers. Applying the same tests to St'a´t'imcets evidential clitics, Matthewson et al. (2007) claim that the evidentials of this language are epistemic modals.

I will apply the following tests to *-DIr* to determine whether it belongs in the category of illocutionary markers or epistemic modals.

(1) i. (In)felicity if embedded proposition is known to be false
ii. (In)felicity if embedded proposition is known to be true
iii. Indirect evidence requirement not cancelable
iv. Indirect evidence requirement not blocked by negation
v. Assent/dissent
vi. Embedding
vii. Readings in interrogatives (Matthewson et al., 2007)

3.2.1 (In)Felicity if embedded proposition is known to be false

If the embedded proposition is known to be false by the speaker, it is infelicitous to use an epistemic modal. Matthewson et al. (2007) explain the reason for this: "… the modal base contains only worlds compatible with the speaker's knowledge. If the speaker knows that p is false, then the modal base contains only non-p-worlds, so the

claim that some or all accessible worlds are p-worlds is not justified." On the other hand, illocutionary operators such as reportatives do not make a claim on the truth or the falsity of the report; thus, even if the speaker knows the embedded proposition is false, their use is felicitous (Matthewson et al., 2007).

According to the results of this test, St'a´t'imcets clitics display parallelism with epistemic modals as shown in Matthewson et al. (2007) while Quechua evidentials display parallelism with illocutionary operators as shown in Faller (2002). (2) shows that in a context in which the speaker knows that it is not raining, the use of *-DIr* is infelicitous in the embedded proposition. Therefore, similar to St'a´t'imcets clitics, *-DIr* displays parallelism with the modal analysis according to this test.

(2) #Yağmur yağ – ıyor – dur, ama yağ – m – ıyor.
rain rain – IMPF – DIr but rain – NEG – IMPF
'It might/must be raining, but it is not raining.'

3.2.2 (In)Felicity if embedded proposition is known to be true

If the embedded proposition is known to be true by the speaker, the modal use is infelicitous, just as when it is known to be false. Matthewson et al. (2007) give two main reasons for this. The first reason is that the evidentiality presupposes indirect evidence; therefore, if the speaker has direct evidence, it would not be appropriate to use an evidential. The second reason is that pragmatically, the speaker should make their statement as informative as possible in line with Grice's Maxim of Quantity. If the speaker knows that *P*, they will not assert '*possibly P*', or '*necessarily P*'. *-DIr* acts like a modal in this test, as well.

(3) Ali Ayşe – yi öp – müş – tür, #gör – düm.

Ali Ayşe – ACC kiss – PF – DIr see – PF

'Ali might/must have kissed Ayşe, I saw it.'

(4) Leyla müzik dinli – yor – dur, #duy – uyor – um.

Leyla music listen – IMPF – DIr hear – IMPF – 1.SG

'Leyla might/must be listening to music, I hear it.'

3.2.3 Indirect evidence requirement not cancelable

Matthewson et al. (2007) argue that the indirect evidence requirement is a presupposition, and unlike conversational implicatures, presuppositions cannot be canceled. As emphasized in Section 2.2.2, *-DIr* is only felicitous in contexts in which the evidence for a proposition *P* is indirect. Since the indirect evidence requirement cannot be cancelled for *-DIr* as shown by the infelicity of the cancelation attempt in (5), it is in line with the modal analysis.

(5) Ali Ayşe – yi öp – müş – tür, #gör – düm.

Ali Ayşe – ACC kiss – PF – DIr see – PF

'Ali might/must have kissed Ayşe, I saw it.'

3.2.4 Indirect evidence requirement not blocked by negation

Since the indirect evidence requirement is a presupposition and cannot be cancelled, and evidentials do not take scope under any other operator, including negation, both the modal analysis and the illocutionary operator analysis predict that indirect evidence requirement will not be blocked through negation (Matthewson et al., 2007).

(6) Ali henüz gel – me – miş – tir.

Ali yet come – NEG – PF – DIr

'I have indirect evidence that Ali has not come yet.'

*'It is not the case that I have indirect evidence that Ali has come.'

3.2.5 Assent/Dissent

Faller (2002) calls assent/dissent a challengeability test and describes it as "If the meaning of the element in question can be questioned, doubted, rejected or (dis)agreed with, then it contributes to the truth conditions of the proposition expressed, otherwise, it does not." Faller (2002) claims that Quechua evidentials fail the assent/dissent test, so they do not contribute to the truth conditions of the proposition expressed and are above the propositional level, just like presuppositions.

(7)a is a statement made based on indirect evidence. When someone wants to challenge this statement, they can do so by uttering (7)c, but not (7)b. In (7)b, the addressee is challenging the evidence which the speaker has for the proposition while in (7)c, the addressee is challenging the proposition itself. Infelicity of (7)b shows that the Quechua evidential marker does not contribute to the truth conditions of the proposition.

(7) a. Ines – qa qaynunchay ñaña – n – ta – s watuku – sqa.

Inés – TOP yesterday sister – 3 – ACC – si visit – PST2

p = 'Inés visited her sister yesterday.'

EV = Speaker was told that p

b. Mana – n chiqaq – chu. #Mana – n chay – ta willa – rqa –
not – mi true – NEG not – mi this – ACC tell – PST1 –
sunki – chu.
3S2O – NEG
'That's not true. You were not told this.'

c. Mana – n chiqaq – chu. Manta – n – ta – lla – n watuku – rqa – n.
not – mi true – NEG mother – 3 – ACC – lim – mi visit – PST1 – 3
'That's not true. She only visited her mother.' (Faller, 2002)

In contrast, when a proposition with *-DIr* is questioned, the person is able to challenge the evidence presented. In (8)a, the speaker makes an assumption based on their previous experience of eating their aunt's food. (8)b, while also challenging the proposition indirectly, primarily challenges the indirect evidence (8)a presents, which contradicts the current knowledge of the addressee. This shows that *-DIr* contributes to the truth conditions of a proposition.

(8) a. Teyze – m çorba yap – mış. Tuzlu – dur ama.
aunt – POSS.1SG soup make – PF/EV salty – DIr though
'My aunt made some soup. It must be salty, though.'

b. Yoo[3], doktor yasakla – dığ – ın – dan beri yemek –
no doctor restrict – CV – POSS.3SG – ABL since food –
ler – e hiç tuz at – mı – yor.
PL – DAT no salt put – NEG – IMPF
'No, she doesn't put any salt in food since the doctor restricted it.'

[3] The equivalent of 'That's not true' in Turkish is 'Doğru değil'; however, native speakers reported that they find it odd in this context. Instead, 'Yoo' sounds more natural, and it accomplishes the task of challenging the indirect evidence presented.

Matthewson et al. (2007) also present the Mastermind scenario for applying this test.

(9) Context: Imagine a game where someone places some different colored pegs behind a screen, and the other person has to guess the colors and the order after getting some clues. After some rounds where I give my son some hints about the solution, he says:

Kırmızı var – dır.

red existent – DIr

'There might/must be some reds.'

Possible responses include:

a. ?Doğru, var – dır.

right existent – DIr

'That's right. There must be.'

b. Doğru, var.

right existent

'That's right. There are.'

c. Yanlış, yok – tur.

wrong non.existent – DIr

'That's wrong. There can't be.'

d. Yanlış, yok.

wrong non.existent

'That's wrong. There aren't.' (Adapted from Matthewson et al., 2007)

Matthewson et al. (2007) argue that their consultants were confused about the 'There might be.' and 'There can't be.' examples on St'a´t'imcets. They attribute this confusion to the fact that the dad knows whether there are reds but uses a modal and

makes a less informative statement, thus violating the quantity maxim. When they explained that the dad was trying not to give away the answer, the consultants found it more acceptable. *-DIr* works similarly in this respect; however, a Turkish speaker would find the epistemic modal *-(y)Abil* better in (9)a which is only used existentially contrary to *-DIr*. We can hypothesize that the reason *-DIr* is less acceptable than the (non-force variable) existential modal *-(y)Abil* is that *-DIr* without adverbial modification is closer in meaning to English *must*, i.e., a universally quantified modal. In order to make this test work, it would be better to weaken the force of *-DIr* with a maybe adverbial.

(10) Doğru, belki var – dır.
right maybe existent – DIr
'That's right. There might be.'

(8) and (9) show that challenges made via 'That's not true' and 'That's wrong' statements and agreements via 'That's true' statements to propositions with *-DIr* questions/confirms the modal claim. Therefore, *-DIr* contributes to the truth conditions of the proposition, justifying the modal analysis.

3.2.6 Embedding

If an element can be embedded in the antecedent of a conditional or under a factive attitude verb or a verb of saying, then it contributes to the proposition expressed. Illocutionary operators cannot be embedded whereas modals can be embedded since they contribute to the truth conditions of the proposition (Matthewson et al., 2007). However, Matthewson et al. (2007) argue that epistemic modals may be unembeddable due to independent reasons. St'a´t'imcets evidentials can be

embedded under verbs of saying and attitude verbs, but they cannot be embedded under the St'a´t'imcets counterpart of *if*.

-DIr, on the other hand, cannot be used in an antecedent of a conditional and it cannot be embedded under verbs of saying and attitude verbs. *-DIr* is only grammatical under the subordinator *diye*; however, *diye* is one of the rare subordinators in Turkish which can embed quote-like finite clauses.

(11) *Ali ev – de – dir – se uyu – yor ol – malı.[4]
Ali home – LOC – DIr – COND sleep – IMPF AUX – OBLG
Intended meaning: 'If Ali is home, he must be sleeping.'

(12) *Fatih [Ali – nin ev – de – dir – i]ni söyle – di.
Fatih Ali – GEN home – LOC – DIr – POSS.3SG – ACC say – PST
Intended meaning: 'Fatih said that Ali must be home.'

(13) *Fatih [Ali – nin ev – de – dir – i]ne inan –
Fatih Ali – GEN home – LOC – DIr – POSS.3SG – DAT believe –
ıyor.
IMPF
Intended meaning: 'Fatih believes that Ali must be home.'

[4] I thank Murat Özgen for pointing out that in some inner lands of the Aegean Region, the use of *-DIr* and conditional *-sE* is very common, and sentences such as (i) are judged grammatically by native speakers of that region.

(i) Eğer bu önceden çanta – y – mış – tır – sa, ben de
if this before bag – COP – EV/PF – DIr – COND I also
eşeğ – im.
donkey – 1SG
'If this had been a bag before, then I am a donkey.'

(14) [Ali ev – de – dir] diye ben de gel – di – m.

Ali home – LOC – DIr SUB I also come – PF – 1SG

'I came as well, thinking that Ali must be home.'

The fact that the sentences in (11), (12), and (13) are not grammatical pertains to *-DIr* being the final suffix to attach to the verb. The only grammatical use of *-DIr* when it is embedded is with the subordinator *diye* because it can embed quote-like finite clauses. Only the plural suffix *-lAr* may attach either before or after *-DIr*; however, the plural suffix has the quirk of displaying this type of variation with other suffixes, as well. Moreover, another epistemic modal in Turkish, *-mAlI*, cannot be embedded under verbs of saying or attitude verbs, nor can it be used with the conditional *-sE*. Therefore, this test is inconclusive regarding *-DIr*'s status as an illocutionary marker or an epistemic modal.

3.2.7 Readings in interrogatives

Faller (2002, 2007) argues that only illocutionary operators allow being used in messenger contexts and asking a question on someone else's behalf.

(15) Context: A son announces to his father that a young man has come to see him. The father sends the son to let him in. The son comes back with more information saying:

Yaya – llá – y, Apu *K'a*naq – pa churi – n – si, riqsi – y –

father – LIM – 1 Apu *K'a*naq – GEN son – 3 – REP know – INF –

ta – s muna – sunki.

ACC – REP want – 3S2O

p = 'Father, he's Apu *K'a*naq's son, he wants to meet you.'

EV: s was told p (by the young man) (Itier, 1995:290 as cited in Faller, 2007)

(16) MF to mother-in-law:

*Ima*yna – n ka – sha – nki

how – BPG be – PROG – 2

'How are you?'

Consultant to mother-in-law:

*Ima*yna – s ka – sha – nki

how – REP be – PROG – 2

'(She says) How are you?' (Faller, 2007)

Matthewson et al. (2007) say that they have not been able to replicate this kind of reading with St'a´t'imcets evidentials. Unsurprisingly, *-DIr* does not allow conveying a message or asking a question on someone else's behalf, either. In Turkish, the only possible way to get a close meaning to what Faller (2002, 2007) describes is via the evidential suffix *-mIş*. In (17)b, Çiğdem reports a statement to Nesrin which she has heard from Ayşe. If Çiğdem utters the same sentence with *-DIr* instead of the evidential marker as in (17)c, it is possible to get both the fact-reporting and the epistemic reading of *-DIr*; however, it is not possible to get a reportative reading.

(17) a. Ayşe to Çiğdem:

Anne – m biraz rahatsız.

mother – POSS.1SG a little unwell

'My mother is not very well.'

b. Çiğdem to Nesrin:

Ayşe'nin	anne – si	biraz	rahatsız – mış.
Ayşe – GEN	mother – POSS.3SG	a little	unwell – EV

'Apparently, Ayşe's mother is not very well.'

(Göksel & Kerslake, 2005)

c. Çiğdem to Nesrin:

Ayşe'nin	anne – si	biraz	rahatsız – dır.
Ayşe – GEN	mother – POSS.3SG	a little	unwell – DIr

'Ayşe's mother might/must be unwell.'

'Ayşe's mother is unwell.'

*'Apparently, Ayşe's mother is not very well.'

It is also possible to use *-mIş* to ask a question on someone else's behalf. While (18)b is totally felicitous in the described context, (18)c, even though grammatical, sounds strange and does not accomplish the intended function of asking a question on someone else's behalf.

(18) Context: In a loud environment where Sena cannot hear Zeynep, Sena asks Nisa what Zeynep said.

a. Zeynep to Sena:

Yemeğ – i	beğen – di – n	mi?
food – ACC	like – PF – 2.SG	INT

'Did you like the food?'

b. Nisa to Sena:

Yemeğ – i	beğen – miş	mi – sin?
food – ACC	like – PF	INT – 2.SG

'(She is asking) Did you like the food?'

c. Nisa to Sena:

Yemeğ – i	beğen – miş	mi – sin – dir?
food – ACC	like – PF	INT – 2.SG – DIr

‘Is it possible that you liked the food?’

*‘(She is asking) Did you like the food?’

3.2.8 Summary

The results of the tests to determine whether *-DIr* is an illocutionary operator or an epistemic modal clearly show that *-DIr*’s behavior is in line with the predictions of the modal analysis. The only property that does not conform to the modal analysis is that *-DIr* cannot occur in the antecedent of a conditional, and it cannot be embedded under attitude verbs and verbs of saying. However, this is because *-DIr* is always the final suffix to attach to the verb (with the exclusion of the plural marker). Supposing that these tests give out reliable results, *-DIr* is an epistemic modal with variable quantification contrary to the claims of Erguvanlı Taylan (2018) and Yangın (2020).

Table 2. Summary of the Tests Applied to *-DIr*

	Modal Analysis	Illocutionary Op. Analysis	*-DIr*
felicitous if p is known to be false?	no	yes	no
felicitous if p is known to be true?	no	yes	no
indirect evidence requirement cancelable?	no	no	no
indirect evidence requirement blocked by negation?	no	no	no
pass assent/dissent test?	yes	no	yes
embeddable?	yes	no	no
allow speech-act readings in interrogatives?	no	yes	no

3.3 *-DIr* vs. other epistemic modals in Turkish

There are various modal expressions in Turkish, and it is important to recognize where *-DIr* fits in. In this section, I compare *-DIr* with the other epistemic modals *-I/Ar*, *-(y)Abil*, *-mAlI* and highlight their similarities and differences.

3.3.1 *-DIr* vs. *-(y)Abil* vs. *-mAlI*

-(y)Abil is used either as an epistemic modal or an ability modal. *-(y)Abil* only expresses existential quantification. Similar to *-DIr*, *-(y)Abil* cannot occur in the antecedent of a conditional in its epistemic reading. However, it can be embedded under attitude verbs and verbs of saying unlike *-DIr*.

(19) *Yarın yağmur yağ – abil – ir – se, şemsiye
tomorrow rain rain – (y)Abil – AOR – COND umbrella
al – a – lım.
take – OPT – 1PL
Intended meaning: 'If it might rain tomorrow, we should take an umbrella.'

(20) a. Zeynep [yarın yağmur yağ – abil – eceğ – i]ne
Zeynep tomorrow rain rain – (y)Abil – FUT – POSS.3SG – DAT
inan – ıyor.
believe – IMPF
'Zeynep believes that it might rain tomorrow.'

b. Zeynep [yarın yağmur yağ – abil – eceğ – i]ni
Zeynep tomorrow rain rain – (y)Abil – FUT – POSS.3SG – ACC
söyle – di.
say – PST
'Zeynep said that it might rain tomorrow.'

-mAlI, on the other hand, is used either as a deontic or as an epistemic modal. *-mAlI* is similar to English *must*, and it only expresses universal quantification. In the epistemic reading, *-mAlI* cannot occur in the antecedent of a conditional, nor can it be embedded under attitude verbs and verbs of saying.

(22) *Yarın yağmur yağ – malı – ysa, şemsiye al – a –
tomorrow rain rain – mAlI – COND umrella take –
OPT –
lım.
1PL
Intended meaning: ‘If it must rain tomorrow, we should take an umrella.’

(23) a. *Zeynep [yarın yağmur yağ – malı]ya inan – ıyor.
Zeynep tomorrow rain rain – mAlI – DAT believe – IMPF
Intended meaning: ‘Zeynep believes that it must rain tomorrow.’

b. *Zeynep [yarın yağmur yağ – malı]yı söyle – di.
Zeynep tomorrow rain rain – mAlI – ACC say – PST
Intended meaning: ‘Zeynep said that it must rain tomorrow.’

Comparing *-DIr* with these modals which express either existential or universal quantification, *-DIr* displays parallelisms with *-mAlI* instead of *-(y)Abil* when it is not modified by any adverbials. The conjunction *... -da ... -da,* which approximately corresponds to English *either ... or ...*, is only appropriate to use with *-(y)Abil*. Since *-mAlI*’s quantificational force is strong, it does not allow an *either ... or ...* reading, and *-DIr* behaves the same way.

(24) Question: Ali evde mi?
‘Is Ali home?
a. Ali ev – de ol – abil – ir de ol – ma
Ali home – LOC AUX – (y)Abil – AOR also AUX – NEG
yabil – ir de.
(y)Abil – AOR also
‘Ali might be either home or not.’

b. #Ali ev – de ol – malı da ol – ma – malı da.

Ali home – LOC AUX – mAlI also AUX – NEG – mAlI also

'Ali must be either home or not.'

c. #Ali ev – de – dir de değil – dir de.

Ali home – LOC – DIr also not – DIr also

'Ali must be either home or not.'

In contexts which make a universal claim true and the ones which make existential claims true, we observe that *-DIr* displays parallelism with *-mAlI* rather than *-(y)Abil*.

(25) Context: Ali and Ayşe live together. There was a mess in the kitchen on Sunday night. When Ayşe wakes up on Monday morning, she sees that the kitchen has been cleaned up. As there has been nobody else in the house, Ayşe says:

a. Ali temizle – miş ol – malı.[5]

Ali clean – PF AUX – mAlI

'Ali must have cleaned it.'

---

[5] Although I claim that *-DIr* and *-mAlI* are parallel in use as epistemic modals, the following sentences show that the use of adverbials such as *kesin* (definitely) is only felicitous with *-DIr*, but not with *-mAlI*.

(ii) (*Kesin) Ali temizle – miş ol – malı.
(*definitely) Ali clean – PF AUX – mAlI
'(Definitely) Ali must have cleaned it.'

(iii) (Kesin) Ali temizle – miş – tir.
(definitely) Ali clean – PF – Dır
'(Definitely) Ali must have cleaned it.'

I suspect that this contrast is due to the fact that *-mAlI* has both epistemic and deontic interpretations. It seems that the use of *-mAlI* with *kesin* serves a function of disambiguating the string in favor of a deontic reading. This could be why the epistemic reading of *-mAlI* with *kesin* is ill-formed. However, the interaction of modal suffixes with modal adverbs in Turkish awaits further research.

b. #Ali temizle – miş ol – abil – ir.

Ali clean – PF AUX – (y)Abil – AOR

'Ali might have cleaned it.'

c. Ali temizle – miş – tir.

Ali clean – PF – DIr.

'Ali must have cleaned it.'

(26) Context: Ayşe, Ali, Zeynep, and Sena live together. They all contribute to the house chores equally. There was a mess in the kitchen on Sunday night. When Ayşe wakes up on Monday morning, she sees that the kitchen has been cleaned. Assuming that there is no additional evidence such as a cleaning schedule or a personality trait which is associated with any of Ayşe's roommates, she says:

a. Ali temizle – miş ol – abil – ir.

Ali clean – PF AUX – (y)Abil – AOR

'Ali might have cleaned it.'

b. #Ali temizle – miş ol – malı.

Ali clean – PF AUX – mAlI

'Ali must have cleaned it.'

c. #Ali temizle – miş – tir.

Ali clean – PF – DIr.

'Ali must have cleaned it.'

d. Belki Ali temizle – miş – tir.

Maybe Ali clean – PF – DIr.

'Ali might have cleaned it.'

Since all the evidence in (25) points to the fact that Ali cleaned the kitchen, using a modal with a weaker force does not seem appropriate in this context. According to Grice's maxim of quantity, speakers should make the most informative utterance, which requires using a modal with a strong force like *-mAlI* instead of a weak one like *–(y)Abil*. *-DIr* is totally appropriate to use in this context. In contrast, in (26), there is not enough evidence to make a strong claim; thus, *-DIr* is appropriate in this context only when its force is weakened by a *maybe* adverbial as in (26)d.

3.3.2 *-DIr* vs. *-I/Ar*

The so-called aorist *-I/Ar* has similar functions to *-DIr*. I argue that *-DIr* and *-I/Ar* are in complementary distribution in terms of the morphosyntactic environments they are used in; thus, they are allomorphs. See Chapter 4 for detailed arguments and discussion.

3.4 A formal semantic analysis of *-DIr*

There are modal expressions in other languages which display similarity with *-DIr* in terms of their variable quantification. St'a´t'imcets, which belongs to the Salish language family, has a number of modals which display variable quantification, and the epistemic clitic *k'a* shows parallelism with *-DIr* in its use.

(27) Wa7 k'a qwenu´xw.

'He must be sick.' or 'I guess that he is sick.'

(Rullmann, Matthewson & Davis, 2008)

(28) Ali hastadır.

'Ali must/might be sick.'

Peterson (2009) observes a similar pattern in Tsimshianic language Gitskan. He points out that the native speakers of the language translate Gitskan sentences

with the epistemic modal *ima* into English by sometimes using 'might' and sometimes 'must'. (29) and (30) show the parallelism between the uses of *ima* and *-DIr*.

(29) yukw = ima = hl tim iixw – t

PROG = MOD = CN.DET FUT fish – 3

'He might be going fishing.' or 'He must be going fishing.' (Peterson, 2009)

(30) Balık tut – ma – ya gid – iyor – dur.

fish catch – VN – DAT go – IMPF – DIr

'(S)he might be going fishing.' or '(S)he must be going fishing.'

In this section, I argue that the semantic analysis Peterson (2009) provides on the Gitskan modal *ima* and the St'a´t'imcets modals can be adopted to explain the force variability observed with *-DIr*.

Peterson (2009) argues that even though the modal *ima* displays variation in quantificational force, the variation is not unrestricted in that one of the translations reflects the default interpretation of the modal. If there are no contextual clues or evidence that would allow the hearer to strengthen the proposition expressed, the speakers would prefer to translate the Gitskan sentences to English with *might* rather than *must*. Thus, he claims that the modal *ima* has existential quantification by default but can be strengthened to universal if the conversational background makes this possible.

On the other hand, as reported in Rullmann et al. (2008), the native speakers of St'a´t'imcets usually prefer the strong reading when there is no additional contextual information present, or the reading is not disambiguated through an adverbial like *sxek* 'maybe'. Therefore, Rullmann et al. (2008) argue that the default force of St'a´t'imcets modals is universal. In the analysis, Rullman et al. (2008)

defend that the existential reading is obtained by positing a choice function that selects a proper subset of the worlds quantified over.

As shown in Section 3.3.1, when compared with other modals in Turkish which have either only universal (*-mAlI*) or only existential readings (*-(y)Abil*), *-DIr* displays parallelism with *-mAlI* in many respects. Speakers can disambiguate the modal force with adverbials meaning *definitely*, but they are usually employed to put emphasis on the utterance. On the other hand, adverbials meaning *possibly* are employed more often to disambiguate the reading. Therefore, I assume that the default force of *-DIr* is universal similar to St'a´t'imcets modals, but its force can be weakened to get an existential reading.

Peterson (2009) argues that while modals in languages such as English encode quantificational force lexically, the force of the modals with variable quantification is determined through context, such as the ones in Gitskan and St'a´t'imcets. Drawing from Kratzer (1991, 2002), Peterson (2009) makes use of the modal base and the ordering source to explain the force variability in Gitskan and St'a´t'imcets modals.

The modal base represents the knowledge and facts that the speaker has about the world, and the ordering source contains the beliefs, ideas, and attitudes of the speaker. Peterson (2009) proposes that the ordering source is empty by default, and when the ordering source of a proposition is empty, the quantificational force of the modal is its default value. Hence, when the ordering source of *ima* is empty, the modal expresses existential quantification by default. In other cases where there are propositions in the ordering source coming from context, the modal gets strengthened and expresses universal quantification. He calls the default empty

ordering source “weak interpretation” and the one with propositions “strong interpretation”.

In contrast, when the ordering source of a St’a´t’imcets modal is empty, the modal expresses universal quantification. The force of the modal can be weakened through the ordering source. According to this proposal, *-DIr*’s quantificational force will be universal by default similar to St’a´t’imcets modals, and when there are propositions in the ordering source, it weakens the force of the modal.

Table 3. Typology of Force Variable Modals (Adapted from Peterson, 2009)

	modal force is lexically ∀ (St’a´t’imcets & Turkish)	modal force is lexically ∃ (Gitskan)
Empty Ordering Source (Default)	*must*-like interpretation	*might*-like interpretation
Non-Empty Ordering Source	*might*-like interpretation	*must*-like interpretation

Based on the findings in Section 3.3.1, I propose that the default quantification of *-DIr* is universal, and it has the same semantic entry as English *must*. However, as opposed to *must*, *-DIr*’s quantificational force can be weakened through the ordering source. The default empty ordering source expresses universal quantification while the non-empty ordering source expresses existential quantification.

(31) For all w and g, ´

[[DIr]]$^{w, g}$ is only defined if g provides a modal base B such that for all worlds w' ∈ B(w), the inferential evidence in w holds in w′.

If defined,

[[DIr]]$^{w, g}$ = $\lambda B_{<s, st>}. \lambda O_{<s, <st, t>>}. \lambda p_{<s, t>}. \forall w' \in Max_{O(w)}(B(w)), p(w') = 1$[6]

B(w) = {u ∈ W : ∀p[(p is indirect evidence in w), u ∈ p]}

O(w) =

i. Strong (default): {∅}

ii. Weak: {p: speaker believes p with respect to the indirect evidence in w}

(Adapted from Peterson, 2009)

To exemplify, native speakers would prefer the strong interpretation rather than the weak one for the utterance in (32)b as an answer to (32)a. In line with Peterson's (2009) proposal, the modal base *B* shows that according to the speaker's current knowledge of the world, Ali comes home after work and usually does not go out on workdays because he needs to sleep early. The speaker does not have any beliefs which may weaken their evidence; therefore, the ordering source is empty, and the force of the modal is universal by default.

[6] *B* stands for the modal base, which determines the set of accessible worlds from the conversational background.
O stands for the ordering source which subjects the accessible worlds to a partial ordering, narrowing down the set of worlds that the modal is talking about.

(32) a. Ali nere – de?

Ali where – LOC

‘Where is Ali?

b. Bu saat – te ev – de – dir.

this hour – LOC home – LOC – DIr

‘He must be home at this hour.’ ≻ ‘He might be home at this hour.’

B(w) Epistemic: {Ali leaves work at 5; he doesn’t go out on workdays; he sleeps early; he wakes up early}

O(w) Empty: {∅}

On the other hand, speakers would prefer the weak interpretation for the utterance in (33)b. According to the speaker’s knowledge of the world, Reyhan was healthy the other day, and she did not come to school today. The speaker makes an assumption based on these facts; however, there are some counter-beliefs the speaker holds which weaken the force of the modal. Since it is not flu season, and Reyhan was healthy the last time the speaker saw her, it is possible that she is not sick. The speaker believes that Reyhan is a heavy sleeper; thus, it is also possible that she did not hear the alarm and overslept. These beliefs the speaker holds, which are found in the ordering source, weaken the default universal force of *-DIr*, leading to a weaker modal claim.

(33) a. Reyhan bugün okul – a gel – me – di.

Reyhan today school – DAT come – NEG – PF

'Reyhan didn't come to school today.'

b. Hasta – dır.

sick – DIr

'She might be sick.' ≻ 'She must be sick.'

B(w) Epistemic: {Reyhan was healthy yesterday; she didn't come to work today}

O(w) Stereotypical: {It is not flu season; Reyhan is a heavy sleeper}

3.5 Conclusion

As an epistemic modal, *-DIr* displays quantificational variation in quantificational force. It can be modified by adverbials meaning *possibly* and adverbials meaning *definitely*. However, when *-DIr* is not modified by any adverbials, it shows parallelism in use with epistemic modal *-mAlI*, which only expresses universal quantification. Therefore, I have argued that the default quantification of *-DIr* is universal, but its force can be weakened to get an existential reading. I have adopted the semantic analysis Peterson (2009) proposes on the Gitskan modal *ima* and St'a´t'imcets modals in order to account for the quantificational variation of *-DIr*.

Peterson (2009) argues that in languages like Gitskan and St'a´t'imcets in which modals seem to display variation in quantificational force, the default force of a modal is obtained when the ordering source is empty. When there are certain beliefs that the speaker holds pertaining to the normal course of events in the world, they are found in the ordering source and may strengthen or weaken the force of the modal claim depending on the lexical specification of a given modal's force. He

claims that Gitskan modal *ima*'s default quantificational force is existential, and St'a´t'imcets modals' default quantificational force is universal. Therefore, while the empty ordering source of *ima* expresses existential quantification, the empty ordering source of St'a´t'imcets modals expresses universal quantification.

In this typology, *-DIr* patterns with St'a´t'imcets modals in that the default quantificational force of *-DIr* is universal. Hence, when the ordering source of *-DIr* is empty, it expresses universal quantification. When there is additional information in the ordering source coming from the context, the force of *-DIr* weakens, allowing us to understand *-DIr* sentences as akin to sentences containing existential modals.

Peterson's (2009) analysis is not the only one available that can account for quantificational variability effects. For example, Rullmann et al. (2008) propose a choice function analysis in order to account for the force variability of St'a´t'imcets modals, as well. They argue that the modals in St'a´t'imcets all make universal quantification, but they are assumed to come with a choice function which has the ability to select a subset of worlds from the modal base. If the choice function does not select a proper subset, i.e., if it works like an identity function, the quantification stays universal. If it selects a proper subset of worlds, effectively restricting the domain of quantification, the reading becomes existential.

According to Rullmann et al.'s (2008) analysis, in addition to the modal base and the ordering source, the modal also has to take a choice function of type <st, st> as an argument. While this analysis is a potential alternative to semantically accounting for modals with quantificational variation, extending it to modals in languages such as Gitskan with default existential quantification may not be possible. Moreover, there is not a direct connection between the utterance context and the subset of worlds that the choice function selects unlike in Peterson's (2009) analysis

which relies on the ordering source. Therefore, I opted to adopt Peterson's (2009) analysis.

CHAPTER 4

-DIr VS. *-I/Ar*

4.1 Introduction

In this chapter, I argue that *-DIr* and the so-called aorist *-I/Ar* are allomorphs of the same morpheme. I make this proposal based on the fact that they fulfill the same functions, they are in complementary distribution in the morphosyntactic environments in which they are used, and they historically originate from the same auxiliary verb *turur*. In Section 4.2, I show the parallelisms between the functions of *-DIr* and the functions of *-I/Ar* and argue that they fulfill the same functions as fact-reporting and epistemic modality in Turkish. In Section 4.3, I examine *-DIr* and *-I/Ar* from the perspective of generics and argue that they are both used to form generic sentences.

In Section 4.4, I compare and contrast the morphosyntactic environments of *-DIr* and *-I/Ar*. Drawing from Kelepir's (2001) categorization of Group 1 and Group 2 TAM markers of Turkish, I show that *-DIr* and *-I/Ar* are in complementary distribution in the morphosyntactic environments in which they are used. I argue that *-DIr* and *-I/Ar* are the manifestation of the same suffix in different environments; that is, *-DIr* is used with Group 1 markers whereas *-I/Ar* is used with Group 2 markers.

In Section 4.5, I discuss a potential approach in analyzing the different functions of *-DIr* and *-I/Ar*. I describe and adapt Özgen's (2021) proposal for the generic and epistemic readings of *-DIr*. I argue that with a syntactic approach, the generic and epistemic readings of *-DIr* and *-I/Ar* as well as modals with multiple meanings can be accounted for.

4.2 Parallelisms between *-DIr* and *-I/Ar*

The so-called aorist[7] *-I/Ar* is usually taken to be "*geniş zaman*" (wide tense) in traditional grammars, which expresses habituals, repetitive actions, and generic statements. However, Yavaş (1979) claims that the aorist reflects aspectual and modal notions, but not tense. Yavaş (1979) argues that the aorist has the effect of characterizing the behavior or property of an entity; therefore, it is used to express habitual and generic statements. Furthermore, Yavaş (1979) describes another use of the aorist which "involves future predictions based on what is known or believed to be true about the factors affecting the actualization of the future event." These two uses are described very similarly to the functions of *-DIr* which was discussed in previous research and in this work.

Sansa (1986) also argues that the function of *-DIr* in non-verbal sentences is totally parallel to the function of the aorist *-I/Ar* in verbal sentences. The aorist can fulfill all the functions of *-DIr* described in Chapter 2. (1) exemplifies the stating facts, (2) making generalizations/talking about habits, and (3) establishing authority functions of both *-DIr* and *-I/Ar* in non-verbal and verbal sentences.

(1) a. Su – yun kayna – ma nokta – sı 100 derece –
water – GEN boil – VN point – POSS.3SG 100 degree –
dir.
DIr
'The boiling point of water is 100 degrees.'

[7] The term aorist is generally used to define tenses which give reference to the past. In Turkish, the aorist by itself does not give reference to past tense; however, it is still labeled as such.

b. Su 100 derece – de kayna – r.

water 100 degree – LOC boil – AOR

'Water boils at 100 degrees.'

(2) a. Ali her akşam yedi – de ev – in – de – dir.

Ali every evening seven – LOC home – POSS.3SG – LOC – DIr

'Ali is home every evening at seven.'

b. Ali her akşam yedi – de ev – in – e

Ali every evening seven – LOC home – POSS.3SG – DAT

gid – er.

go – AOR

'Ali goes home every evening at seven.' (Sansa 1986)

(3) a. Bu son – du. Bu iş bura – da bit – miş – tir.

this last – PST this matter here – LOC end – PF – DIr

'This was the last time. This matter is done here.'

b. Bu son – du. Bu iş bura – da bit – er.

this last – PST this matter here – LOC end – AOR

'This was the last time. This matter is done here.'

In addition to the fact-reporting functions discussed above, the aorist can be used in an epistemic sense as well. Moreover, the aorist shows variation in its quantificational force when it is used as an epistemic modal. It can co-occur with both adverbials meaning *possibly* and adverbials meaning *definitely* just like *-DIr*.

(4) a. Ali belki/kesin gel – ecek – tir.

Ali possibly/definitely come – FUT – DIr

'Possibly/Definitely, Ali will come.'

b. Ali belki/kesin gel – ir.

Ali possibly/definitely come – AOR

'Ali might/must come.'

As seen with the above examples and originally stated by Sansa (1986), the functions of the aorist and *-DIr* are entirely the same. One has no function that the other cannot fulfill. Moreover, Lewis (1967) argues *-DIr* and *-I/Ar* come from the same auxiliary verb in old Turkic languages in the form of *tur – ur* which means 'he/she/it stands'. Temürcü (2004), on the other hand, argues that in the formal paradigm of TAM marking, *-DIr* belongs to post-clitics, and *-I/Ar* belongs to the category of bound markers.

The fact that the aorist and *-DIr* cannot be combined is our first clue that they are complementary forms. Furthermore, morphosyntactically, they are genuinely in complementary distribution. The Turkish tense, aspect, and modal markers can be combined with either *-I/Ar* or *-DIr*, but not both. *-I/Ar* can be used with verbal predicates, the past tense marker *-DI*, and the modal *-(y)Abil*. On the other hand, *-DIr* is used with non-verbal predicates, the future marker *-EcEk*, the imperfective markers *-Iyor* and *-mEktE*, and the modal marker *-mAlI*. (5) exemplifies the aorist's combination with other TAM markers while (6) exemplifies *-DIr*'s combination with other TAM markers. The morphosyntactic distribution of *-DIr* and *-I/Ar* are discussed in detail in Section 4.3.

(5) a. Verbal predicates:

Ali iyi araba sür – er.

Ali well car drive – AOR

'Ali must/might drive well.' Or 'Ali drives well.'

b. *-DI*:

Her akşam kitap oku – r – du – m.

every evening book read – AOR – PST – 1SG

'I used to read every evening.' Or 'I would read every evening (if I had the time).'

c. –(y)Abil:

Köpek – im ev – in yol – un – u bul –

dog – POSS.1SG house – GEN way – POSS.3SG – ACC find –

abil – ir.

(y)Abil – AOR

'My dog can find the way to the house.' Or 'My dog may find the way to the house.'

(6) a. non-verbal predicates:

Sena uzun – dur.

Sena tall – DIr

'Sena is tall.' Or 'Sena might/must be tall.'

Nisa öğrenci – dir.

Nisa student – DIr

'Nisa is a student.' Or 'Nisa might/must be a student.'

b. *–(I)yor*:

Otobüs gel – iyor – dur.

bus come – IMPF – DIr

'The bus must/might be coming.'

c. *-mEktE*:

Şair bura – da yaşa – makta – dır.

poet here – LOC live – IMPF – DIr

'The poet lives here.'

d. *-EcEk*:

O da gel – ecek – tir.

(s)he also come – FUT – DIr

'(I guess) (s)he will come as well.'

e. *-mAlI*:

Öğrenci – ler forma giy – meli – dir.

student – PL uniform wear – OBLG – DIr

'The students must wear uniforms.'

4.3 *-DIr* and *-I/Ar* as generics

In this section, I review the previous works on generics and explore how generic sentences are formed in Turkish. I examine the properties of generics that distinguish them from other constructions in language. I summarize the proposals analyzing generics in formal semantics, as well as different types of generics, namely, generics which express a predication of a kind and characterizing generics. Comparing these facts with Turkish, I argue that one of the functions of *-DIr* and *-I/Ar* is to form generic sentences in Turkish.

What are known as generalizations and habitual sentences in traditional grammars are categorized as generic sentences in formal semantics. Lazaridou-Chatzigoga, Katsos, and Stockall (2015) argue that generic sentences differ from quantificational generalizations in that generic sentences cannot be modeled with set-

inclusion relationships, but they reflect "richer and more complex relations with the kind and the property."

The main properties of generics which distinguish them from other constructions are (i) temporal unboundedness, (ii) law-likeness or regularity, (iii) association with dispositions or abilities, (iv) resistance to contextual restriction, and (v) tolerance to exceptions (Lazaridou-Chatzigoga et al., 2015).

The first two properties of generics, temporal unboundedness and law-likeness, are related to each other. Generic sentences are temporally unbounded, which means that their truth conditions do not relate to a time interval with definite bounds. Since laws don't apply to single events but show regular patterns in certain types of events, their truth isn't limited to bounded time intervals. Therefore, Mari, Beyssade, and Del Prete (2013) argue that characterizing generics cannot be modified by "adverbs denoting particular temporal locations".[8]

(7) a. Köpek – ler öğlen üç – te havl – ıyor – du.
dog – PL noon three – LOC bark – IMPF – PST
'Dogs were barking at three p.m.'

b. #Köpek – ler bugün havla – r.[9]
dog – PL today bark – AOR
'Dogs bark today.' (Translated from Mari et al., 2013)

Generics are associated with dispositions or abilities. Mari et al. (2013) argue that the sentence in (8)a is fundamentally equivalent to the sentence in (8)b.

[8] Generics which express a predication of a kind are compatible with adverbs denoting temporal locations, as will be seen in (11)b.
[9] When interpreted in the generic sense, and not in the epistemic sense as in 'Dogs must/might bark today.'

(8) a. John durmadan 50 mil koş – ar.

John continuously 50 mile run – AOR

'John runs 50 miles without stopping.'

b. John durmadan 50 mil koş – abil – ir.

John continuously 50 mile run – (y)Abil – AOR

'John can run 50 miles without stopping.'

(Translated from Mari et al., 2013)

Generics cannot be contextually restricted unlike quantifiers. Krifka et al. (1995) argue that while quantifiers can be subject to quantifier domain restriction, generic kind-referring NPs cannot. Therefore, the sentence in (9)a can be restricted to mean the lions in this cage are dangerous, but the NP *lions* in (9)b may only be interpreted as referring to the kind *lions* and cannot be restricted to mean the lions in this cage.

(9) Context: There are lions and tigers in this cage.

a. Every lion is dangerous. (Can mean 'Every lion in this cage is dangerous')

b. Lions are dangerous. (Cannot mean 'Lions in this cage are dangerous')

(Lazaridou-Chatzigoga et al., 2015)

Generics tolerate exceptions contrary to quantificational statements. The truth value of generic statements does not depend on every entity in the domain possessing the predicated property. For example, the sentences in (10) all have different percentages of exceptions to their truth. While (10)a has zero exceptions, (10)b is true for most telephone books, (10)c is only true for male lions, (10)d is only true for the minority of the Frenchmen, and (10)e is only true for a very small percentage of mosquitos; however, all of these generic sentences have been reported to be true.

(10) a. Yılan – lar sürüngen – dir.

snake – PL reptile – DIr.

'Snakes are reptiles.'

b. Telefon rehber – ler – i kalın – dır.

telephone contact – PL – POSS.3SG thick – DIr.

'Telephone books are thick.'

c. Aslan – lar – ın yele – ler – i var – dır.

lion – PL – GEN mane – PL – ACC existent – DIr

'Lions have manes.'

d. Fransız – lar at et – i ye – r.

French – PL horse meat – POSS.3SG eat – AOR

'Frenchmen eat horsemeat.'

e. Sivrisinek – ler Batı Nil Virüs – ü taşı – r – lar.

mosquito – PL west Nile virus – POSS.3SG carry – AOR – PL

'Mosquitos carry the West Nile Virus.'

(Translated from Pelletier, 2010)

Generics are usually investigated under two categories: (i) generics which express a predication of a kind and (ii) characterizing generics. The former type of generics is used to express a property of a kind such as the sentences in (11). Krifka et al. (1995) argue that the various types of NPs in the sentences in (11) do not refer to an individual potato or a specific group of potatoes, but they refer to the kind *potato*.

(11) a. The potato was first cultivated in South America.

b. Potatoes were introduced into Ireland by the end of the 17th century.

c. The Irish economy became dependent upon the potato.

(Krifka et al., 1995)

Characterizing generics, on the other hand, do not express "specific episodes" or "isolated facts," but they express generalizations based on properties of individual objects or generalizations over events such as habits (Krifka et al., 1995). For instance, sentence (12)a exemplifies a generalization over John's smoking event, while sentence (12)b exemplifies a generalization based on the properties of an individual potato.

(12) a. John smokes a cigar after dinner.

b. A potato contains vitamin C, amino acids, protein and thiamine.

(Krifka et al., 1995)

In Turkish, both generics which express a predication of a kind and characterizing generic sentences are expressed either with *-DIr* or with *-I/Ar* as shown in the sentences in (8), (9), and (10). As explained in previous sections, *-DIr* is used with non-verbal predicates while *-I/Ar* is used with verbal predicates. (13)a-b exemplify generics which express a predication of a kind and (13)c-d exemplify characterizing generics with *-DIr* and *-I/Ar*.

(13) a. Kuzgun – lar siyah – tır.

raven – PL black – DIr

'Ravens are black.' (Translated from Cohen, 2022)

b. Kuş – lar uç – ar.

bird – PL fly – AOR

'Birds fly.' (Translated from Cohen, 2022)

c. Mary yemek – ten sonra sigara iç – er.

Mary dinner – ABL after cigarette smoke – AOR

'Mary smokes after dinner.' (Translated from Cohen, 2022)

d. Ali her akşam yedi – de ev – in – de – dir.

Ali every evening seven – LOC home – POSS.3G – LOC – DIr

'Ali is home every evening at seven.' (Sansa, 1986)

Generics need not be expressed only in the present tense. Both kind predication and characterizing generics may give reference to past and future tenses. Both kind predication and characterizing generics are expressed with the future marker *-EcEk* optionally followed by *-DIr* in Turkish when they give reference to future tense. On the other hand, generic sentences which give reference to the past may be expressed with the combination of *-mIş* and *-DIr* or with the combination of *-I/Ar* and *-DI*. The sentence in (14)a exemplifies a kind predication which gives reference to the future tense, (14)b exemplifies a characterizing generic in the past with *-I/Ar* while the sentence in (14)c exemplifies a kind predication in the past with *-DIr*. It is also possible to use only the past marker *-DI* for kind predication as shown in (14)d.

(14) a. Yakında penguen – ler – in nesl – i tüken – ecek

soon penguin – PL – GEN breed – POSS.3SG be.extinct – FUT

– (tir).

– (DIr)

'Penguins will be extinct soon.'

b. Ali sigara iç – er – di.

Ali cigarette smoke – AOR – PST

'Ali used to smoke.'

c. Patates ilk kez Güney Amerika – da yetiş –

potato first time South America – LOC cultivate –

tir – il – miş – tir.

CAUSE – PASS – PF – DIr

'The potato was first cultivated in South America.'

d. Patates ilk kez Güney Amerika – da yetiş –

potato first time South America – LOC cultivate –

tir – il – di.

CAUSE – PASS – PST

'The potato was first cultivated in South America.'

Krifka et al. (1995) argue that in English, characterizing sentences lose their generic meaning when they are made progressive. However, in Turkish, the progressive marker *-(I)yor* can be used in characterizing sentences, as well. The examples in (15) show the uses of *-I/Ar* and *-(I)yor* in characterizing generic sentences.[10]

(15) a. Mary yemek – ten sonra sigara iç – er/iyor.

Mary dinner – ABL after cigarette smoke – AOR/IMPF

'Mary smokes after dinner.'

b. Fransız – lar at et – i ye – r/iyor.

French – PL horse meat – POSS.3SG eat – AOR/IMPF

'Frenchmen eat horsemeat.'

[10] Turkish has another progressive marker, namely *-mEktE*, which cannot be used in a generic sense in line with Krifka et al.'s (1995) argument.

c. Köpek – ler Sam – i gıcık ed – er/iyor.

dog – PL Sam – ACC annoy AUX – AOR/IMPF

'Dogs annoy Sam.'

d. İki iki dört ed – er/#iyor.

two two four make – AOR/#IMPF

'Two plus two makes one.'

e. Muz – lar bir dolar – a sat – ıl – #ır/ıyor.

banana – PL one dollar – DAT sell – PASS – #AOR/IMPF

'Bananas are sold for a dollar.'

(Translated from Cohen, 2022)

As seen in the examples in (15), in many instances, *-I/Ar* and *-(I)yor* can be used interchangeably in generic sentences. However, (15)d and (15)e exemplify two sentences which show the difference in their uses. Dikmen and Demirok (under review) claim that *-I/Ar* is used with habituals, which describe rule-like generalizations and necessarily project into the future, as well as non-actualized generalizations. On the other hand, *-(I)yor* cannot be used with habituals which project into the future or describe non-actualized generalizations, but it can be used with habituals which describe incidental habits.

The sentence in (15)d can only be interpreted as generic if it is used with *-I/Ar* because it expresses a rule-like generalization that projects into the future. If the sentence is used with *-(I)yor*, it loses its generic meaning and can only express a particular event of adding two and two. On the other hand, (15)e does not express a rule-like generalization; rather, it expresses a particular point in time in which bananas are sold for a dollar, but it does not mean that they will always be sold for a dollar. Therefore, it is possible to use both *-I/Ar* and *-(I)yor* in order to form

characterizing generic sentences in Turkish, but their habitual readings differ from each other.

In sum, Turkish generic sentences are formed with *-DIr* and *-I/Ar* in the present tense, with *-EcEk* in the future tense, and with the combination of *-I/Ar* + *-DI*, the combination of *-mIş* + *-DIr* or only with *-DI* in the past tense. Drawing from these results, I argue that the stating facts, generalizations and habitual readings of *-DIr* and *-I/Ar* belong to the category of generics. Fact-stating sentences can be either kind predication or characterizing generics whereas generalizations and habituals fall under the category of characterizing generics. On the other hand, while not explored in other languages, the establishing authority function, which was described in Chapter 2, might be a pragmatic extension of the generic use, in a way uttering a proposition as if it is a law-like statement.

In sum, *-DIr* and *-I/Ar* has two fundamental functions: (i) generic function and (ii) epistemic function. This polyfunctionality also aligns well with Dahl's (1995) claim that there is no language in which there is a specific construction which is only used for expressing genericity. Every language has a way of expressing genericity, but with forms which have both generic and non-generic uses.

There are different approaches in analyzing generics in formal semantics; however, there isn't a unifying theory. Following Carlson's (1995) terminology, Cohen (2022) examines the theories of generics under two titles: (i) rules and regulation theories and (ii) inductivist theories.

Rules and regulation theories claim that generics do not express quantification. Generics are different from universally quantified sentences because while universal quantification does not allow exceptions, generic sentences do. They argue that generic sentences are evaluated according to the rules of the world, which

can be physical, biological, social, moral, etc. Each generic sentence denotes a rule, and if the rule is in effect, the sentence is true; if not, the sentence is false (Cohen, 2022). Some rules and regulations theories include predication of a property of a kind (Carlson, 1977), default rules (Krifka, 1987), cultural conventions/stereotypes (Declerk, 1986), and constraints on situations (Cavedon & Glasbey, 1994; ter Meulen, 1986).

On the other hand, inductivist theories claim that generics are quantificational. Cohen (2022) explains that inductivist theories argue "a generic sentence is true just in case sufficiently many relevant individuals in the domain of the generic satisfy the predicated property." "Sufficiently many individuals" vary according to different theories. Some argue that for a generic to be true, it encodes "significantly many individuals"; some others claim it must encode "most individuals".

Some inductivist theories claim that generic sentences express universal quantification over possible individuals (Schubert & Pelletier, 1989) or quantification over possible worlds (Dahl, 1975), while some others claim they express universal quantification over "normal" individuals (Asher & Morreau, 1995; Delgrande, 1987; Greenberg, 2003; Krifka, 1995; Nickel, 2016; Pelletier & Asher, 1997). Cohen (1999), Krifka (1995), and Partee (1991) claim that generics are associated with focus which restricts the domain of the generic quantifier. Sterken (2015) proposes that generics are underspecified and dependent on context.

Cohen (2022) argues that both the rules & regulations and inductivist approaches in analyzing generics have their strong and weak points, as some generics are better explained by the rules & regulations approach and others by the inductivist approach. Therefore, since genericity is already a very complex topic, it is

outside the scope of this thesis to decide which theory, if any, is best suited to explain the generic sentences in Turkish with *-DIr* and *-I/Ar*, and this matter is left for future research.

4.4 Morphosyntactic distribution of *-DIr* and *-I/Ar*

In this section, drawing from Kelepir's (2001) distinction of Group 1 and Group 2 TAM markers of Turkish, I argue that *-DIr* and the aorist *-I/Ar* are in complementary distribution in their morphosyntactic environments and support my claim that they are allomorphs of the same morpheme. I argue that *-DIr* is used following the copula which is inserted after Group 1 TAM markers whereas *-I/Ar* is used elsewhere with Group 2 TAM markers in order to express parallel functions. I also propose some modifications to Kelepir's (2001) Group 1 and Group 2 markers.

Drawing from Kornfilt (1996), Kelepir (2001) argues that aspectual markers do not form finite verbs, but they are, in fact, participles that are embedded under a copula. She argues for the existence of two groups of TAM markers based on their use with z-paradigm and k-paradigm person markers. Z-paradigm and k-paradigm are called as such due to the variation in 1st person plural marker with the use of these suffixes.

Group 1 TAM markers are used with the z-paradigm person markers, the aspectual and modal markers consisting of the imperfective marker *-(I)yor*, the future marker *-EcEk*, perfective/evidential marker *-mIş*, the aorist *-I/Ar*, the necessitative modal *-mAlI* and the abilitative modal *-(y)Abil*. On the other hand, Group 2 TAM markers are used with the k-paradigm person markers, which include the past tense marker *-DI* and the conditional *-sE*. Table (4) displays the Group 1 TAM markers and

the compatible person markers of the z-paradigm, while Table (5) shows the Group 2 TAM markers with the compatible person markers of the k-paradigm.

Table 4. Group 1 TAM Markers and Person Markers of the z-paradigm (Kelepir, 2001)

Group 1 TAM markers
-(I)yor
-EcEk
-mIş
-I/Ar
-mAlI
-(y)Abil

Person markers of z-paradigm	
1st person sg	-(y)Im
2nd person sg	-sIn
3rd person sg	∅
1st person pl	-(y)Iz
2nd person pl	-sInIz
3rd person pl	∅ / -lAr

Table 5. Group 2 TAM Markers and Person Markers of the k-paradigm (Kelepir, 2001)

Group 2 TAM markers
-DI
-sE

Person markers of k-paradigm	
1st person sg	-m
2nd person sg	-n
3rd person sg	∅
1st person pl	-k
2nd person pl	-nIz
3rd person pl	∅ / -lAr

Kelepir (2001) claims that Group 1 TAM markers are participles which can occur without tense and agreement markers, and they are embedded under a copula that is

overt or covert based on phonological rules. On the other hand, Group 2 markers form finite verbs. Kelepir (2001) argues that in Turkish, the Asp head carries a [-verbal] feature. Verbs inflected with Group 1 markers move up to the Asp head. However, since the T head has a [+verbal] feature, it blocks the verb from moving on the T head. Thus, the copula is inserted on the T head. With the past tense marker, however, the structure does not have an Asp head; therefore, the verb can move up to the T head freely.

Table (6) and (7) show the TAM markers which can be used with *-DIr* and *-I/Ar*. It can be seen that the tables displaying the Group 1 and 2 TAM markers in Table (6) and Table (7) and the tables displaying the markers in which *-DIr* and *-I/Ar* are used with have a very significant overlap.

Table 6. TAM Markers Compatible with *-DIr*

TAM markers compatible with *-DIr*
-(I)yor
-EcEk
-mIş
-mElI

Table 7. TAM Markers Compatible with *-I/Ar*

TAM markers compatible with *-I/Ar*
-(y)Abil
-mIş
-DI
-sE

As Sansa (1986) confirms, *-DIr*'s use in non-verbal sentences and *-I/Ar*'s use in verbal sentences are parallel. Temürcü (2004) also argues that *-DIr* and *-I/Ar* are in complementary distribution. To extend their arguments, we know that *-DIr* can attach not only to the bare non-verbal predicate but also the TAM markers that are given in Table (6), and the aorist can occur with the markers in Table (7) apart from the bare verb. Kelepir's (2001) argument on the distinction between the Group 1 and 2 TAM markers may provide evidence for the claim that *-DIr* can only attach to participles with a copula while *-I/Ar* can attach elsewhere.

While there is a big overlap between Group 1 markers and TAM markers compatible with *-DIr* as well as Group 2 markers and TAM markers compatible with the aorist, they are not completely the same. First, Kelepir (2001) puts *-mIş* in Group 1; however *-mIş* can be used both with the aorist and *-DIr*.

(16) a. Yemek gel – miş – tir.
Food come – mIş – Dir
'The food might/must have come.'

b. Yemek gel – ir – miş.
Food come – AOR – mIş

‘The food used to come.’

Moreover, the suffix *-(y)Abil* is categorized as a Group 1 marker, so according to my proposal, we would expect it to be compatible with *-DIr*. However, it is compatible with the aorist *-I/Ar*.

(17) a. Sena 7 – de gel – ebil – ir.

Sena 7 – LOC come – (y)Abil – AOR

‘Sena may come at 7.’

b. *Sena 7 – de gel – ebil – dir.

Sena 7 – LOC come – (y)Abil – DIr

Intended meaning: ‘Sena may come at 7.’

To start with the former problem, while Kelepir (2001) categorizes *-mIş* as a Group 1 marker, she basically argues for the existence of two separate *-mIş* markers: *-mIş* as perfective aspect and *-mIş* as an evidential marker. She argues that when *-mIş* is attached to a bare verb, *-(I)yor*, or a non-verbal predicate, it is interpreted as an evidential marker whereas when it is used before the past tense marker *-DI*, it is interpreted as perfective aspect.

According to Kelepir (2001), *-mIş* as an evidential marker is attached after a copula. She presents the examples in (18) and (19) as evidence for this claim. Especially in non-verbal sentences as in (18)a, the copula is overt and clearly seen to be attached before the evidential marker. (18)b and (19)b sentences show that since both evidential and tense occupy higher places in the hierarchy, they cannot be used at the same time.

(18) a. Hasta – y – mış.

Sick – COP – EV

‘Apparently, he was/is sick.’

b. *Hasta – y – mış – tı.

Sick – COP – EV – PST

Intended: He had been sick. (Kelepir, 2001)

(19) a. Gid – iyor – ∅ – muş.

Go – IMPF – COP – EV

'Apperantly, he was/is going.'

b. *Gid – iyor – ∅ – muş – tu.

Go – IMPF – COP – EV – PST

Intended: 'Apperantly, he was/is going.' (Kelepir, 2001)

In contrast, when *-mIş* is used before the past tense marker *-DI*, it can only be interpreted as perfective aspect. Aspect occupies a lower place in the hierarchy below the copula; therefore, *-mIş* does not block the use of the past marker *-DI*.

(20) Gel – miş – ∅ – ti.

Come – PF – COP – PST

'He had come.' (Kelepir, 2001)

In accordance with this distinction between the evidential *-mIş* and perfective *-mIş*, it is seen that *-DIr* is compatible with the perfective *-mIş* while *-I/Ar* is compatible with the evidential *-mIş*. Therefore, it does not falsify the argument that they are in complementary distribution. It also shows that *-DIr* occupies a higher position in the TAM hierarchy above the copula while the aorist is in a lower place below evidential.

(21) a. Bura – da at yarış – ı yap – ıl – ır – ∅ – mış.

here – LOC horse race – POSS.3SG do – PASS – AOR – COP – EV

(i) 'Apparently, horse races used to be organized here.'

(ii) '(Apparently) here is a suitable place to organize horse races.'

b. Bura – da at yarış – ı yap – ıl – mış – Ø – tır.

here – LOC horse race – POSS.3SG do – PASS – PF – COP – DIr

(i) ‘(It is a fact that) horse races were organized here.’

(ii) ‘Horse races must/might have been organized here.’

The second problem is that while the modal *-(y)Abil* is categorized as a Group 1 marker, it cannot be combined with *-DIr*, unlike other Group 1 markers. Instead, it is compatible with *-I/Ar*. I argue that since *-(y)Abil* cannot form finite verbs by itself, it is not actually a Group 1 marker, and it occupies a lower position than Group 1 markers in the TAM hierarchy.

As seen in (22), *-(y)Abil* cannot be used by itself in finite sentences, but it needs to be combined with other TAM markers to form finite verbs. In fact, it can be combined with all Group 1 and Group 2 markers which Kelepir (2001) describes. The examples in (23) display the combination of *-(y)Abil* with Group 1 TAM markers, and the examples in (24) display the combination of *-(y)Abil* with Group 2 TAM markers.

(22) *Ali gitar çal – abil.

Ali guitar play – (y)Abil

Intended meaning: ‘Ali can play the guitar.’

(23) *-(y)Abil* with Group 1 markers[11]:

a. Ali gitar çal – abil – iyor.

Ali guitar play – (y)Abil – IMPF

'Ali can play the guitar.'

b. Ali gitar çal – abil – ecek.

Ali guitar play – (y)Abil – FUT

'Ali will be able to play the guitar.'

c. Ali gitar çal – abil – miş.

Ali guitar play – (y)Abil – EV/PF

'Apparently, Ali was able to play the guitar.'

d. Ali gitar çal – abil – ir.

Ali guitar play – (y)Abil – AOR

(i) 'Ali can play the guitar.'

(ii) 'Ali may play the guitar.'

e. Ali gitar çal – abil – meli.

Ali guitar play – (y)Abil – OBLG

'Ali must be able to play the guitar.'

(24) *-(y)Abil* with Group 2 markers:

a. Ali gitar çal – abil – di.

Ali guitar play – (y)Abil – PST

'Ali was able to play the guitar.'

[11] While it seems like the combination of *-(y)Abil* with the aorist *-I/Ar* and the imperfective marker *-(I)yor* express the same abilitative meaning, *-(I)yor* is used to express an actual ability meaning while the aorist can express either an inherent ability of the subject or a future possibility as in d(ii). They were translated the same for the sake of simplicity.

b. Ali gitar çal – abil – se ben bil – ir – di –

Ali guitar play – (y)Abil – COND I know – AOR – PST –

m.

1.SG

'If Ali were able to play the guitar, I would know it.'

The fact that all the other TAM markers can be attached after *-(y)Abil* clearly shows that it is the innermost marker of the hierarchy just after the verb. While it is attested that in Turkish, modality markers occupy a place lower than aspect and tense, we have seen that in (23)e, *-(y)Abil* appears to be lower than *-mAlI* as well, which is also a modality marker. Moreover, *-mAlI* does not have the same issue of not being able to form finite verbs by itself like *-(y)Abil*. Therefore, it confirms Kelepir's (2001) argument that a copula is present in sentences with only *-mAlI*.

(25) Ali gitar çal – malı – ∅.

Ali guitar play – OBLG – COP

'Ali must play the guitar.'

Comparing *-mAlI* and *-(y)Abil*, it seems that *-mAlI* is in fact a Group 1 marker which can be attached to a copula to form finite sentences while *-(y)Abil* is not. This also explains why *-DIr* cannot attach to *-(y)Abil*, but it can attach to *-mAlI*. As seen with the examples in (21), *-DIr* attaches to the copula while *-I/Ar* attaches before the copula. Since there is no copula after *-(y)Abil*, *-DIr* cannot attach to it.

More evidence on *-(y)Abil* not being a Group 1 marker comes from the tests Kelepir (2001) applies to Group 1 and Group 2 TAM markers in order to display the distinction between them. These tests, when applied to *-(y)Abil*, give out false results towards the argument that *-(y)Abil* is a Group 1 marker, as well. The first evidence she presents is that in double negation environments with the negative predicate

değil, *değil* itself carries the agreement marker when used with Group 1 markers. However, with Group 2 markers, the TAM marker carries the agreement marker. This contrast is shown in (26) and (27).

(26) a. Ben gel – me – yecek değil – im.
I come – NEG – FUT not – 1.SG
'It is not that I am not going to come.'

b. *Ben gel – me – yeceğ – im değil.
I come – NEG – FUT – 1.SG not (Kelepir, 2001)

(27) a. *Ben gel – me – di değil – im.
I come – NEG – PST not – 1.SG

b. Ben gel – me – di – m değil.
I come – NEG – PST – 1.SG not
'It is not that I didn't come.' (Kelepir, 2001)

This test is not applicable for *-(y)Abil* because as emphasized above, it cannot form finite sentences, so it cannot take agreement markers with or without *değil*.

The second test Kelepir (2001) applies is coordination with suspended affixation. She shows that when verbs with Group 1 markers are coordinated, the tense and agreement markers on the first conjunct's verb can be dropped, and it can be interpreted as it is under the scope of the tense and agreement markers of the second conjunct's verb. However, Group 2 markers do not allow suspended affixation.

(28) a. Ben para – yı al – ıyor – du – m (ve) o – na

I money – ACC take – IMPF – PST – 1.SG and s(he) – DAT

ver – iyor – du –m.

give – IMPF – PST – 1.SG

'I was taking the money and giving (it) to him/her.'

b. Suspended affixation:

Ben para-yı al – ıyor (ve) o – na ver – iyor –

I money – ACC take – IMPF and s(he) – DAT give – IMPF –

du – m.

PST – 1.SG

'I was taking the money and giving (it) to him/her.' (Kelepir, 2001)

(29) a. Ben para – yı al – dı – m (ve) o – na ver –

I money – ACC take – PST – 1.SG and s(he) – DAT give –

di – m.

PST – 1.SG

'I took the money and gave (it) to him/her.'

b. Suspended affixation:

*Ben para – yı al – dı (ve) o – na ver –

I money – ACC take – PST and s(he) – DAT give –

di – m.

PST – 1.SG (Kelepir, 2001)

Unlike other Group 1 markers, *-(y)Abil* cannot be used in a suspended affixation context. Again, we can see that *-(y)Abil* does not fit in with the Group 1 markers.

(30) a. Ben para – yı al – abil – di – m (ve) o – na

I money – ACC take – (y)Abil – PST – 1.SG and s(he) – DAT

ver – ebil – di –m.

give – (y)Abil – PST – 1.SG

'I was able to take the money and give (it) to him/her.'

b. Suspended affixation:

*Ben para-yı al – abil (ve) o – na

I money – ACC take – (y)Abil and s(he) – DAT

ver – bil – di – m.

give – (y)Abil – PST – 1.SG

Finally, Kelepir (2001) shows that Group 1 markers cannot be embedded under the nominalizer *-DIK*, but if it is necessary to express an aspectual difference, they can be embedded under the verb *ol-*. Thus, the nominalizer and the agreement markers appear on the light verb *ol-*. Yet, Group 2 past tense marker *-DI* cannot be nominalized in an embedding environment with *ol-*. (31) shows the illicit nominalizing of the Group 1 aspectual markers, and (32) shows the embedding of Group 1 markers under *ol-*.

(31) a. *Sen – in gel – iyor – duğ – un – u duy –

you – 2.GEN come – IMPF – DIK – 2.POSS – ACC hear –

du – m.

PST – 1.SG

Intended meaning: 'I heard that you are coming.'

b. *Sen – in gel – miş – in – i duy – du – m.

you – 2.GEN come – EV – 2.POSS – ACC hear – PST – 1.SG

Intended meaning: 'I heard that you came.' (Kelepir, 2001)

(32) a. Sen – in sınav – a hazırlan – ıyor ol – duğ –
you – 2.GEN exam – DAT prepare – IMPF be – DIK –
un – u bil – iyor – um.
2.POSS – ACC know – IMPF – 1.SG
'I know that you're preparing for the exam.'

b. Sen – in sınav – a hazırlan – mış ol – duğ – un –
you – 2.GEN exam – DAT prepare – PF be – DIK – 2.POSS –
u bil – iyor – um.
ACC know – IMPF – 1.SG
'I know that you have prepared for the exam.' (Kelepir, 2001)

While according to Kelepir's (2001) categorization, it would be expected that *-(y)Abil* cannot be embedded under the nominalizer *-DIK*, the examples in (33) show that it can. In contrast, it cannot be embedded under the verb *ol-* unlike Group 1 markers shown in (32).

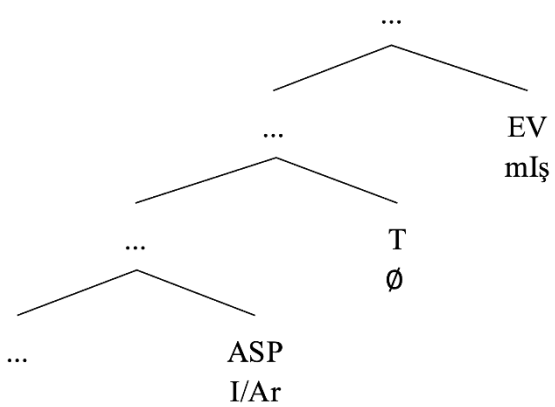
(33) a. Sen – in gel – ebil – diğ – in – i duy –
you – 2.GEN come – (y)Abil – DIK – 2.POSS – ACC hear –
du – m.
PST – 1.SG
'I heard that you were able to come.'

b. *Sen – in gel – ebil ol – duğ – un – u
you – 2.GEN come – (y)Abil be – DIK – 2.POSS – ACC
duy – du – m.
hear – PST – 1.SG
Intended meaning: 'I heard that you were able to come.'

In conclusion, drawing from Sansa (1986) and Kelepir (2001), I have argued that *-DIr* is used in non-verbal (participial) environments while *-I/Ar* is used elsewhere. *-DIr* may be attached to what Kelepir (2001) calls the Group 1 TAM markers. In accordance with her proposal, this means that *-DIr* actually attaches to the copula while *-I/Ar* stays under the copula (as it is already categorized as a Group 1 marker). However, in order for this hypothesis to work, I have made some adjustments to the list of Group 1 and Group 2 TAM markers.

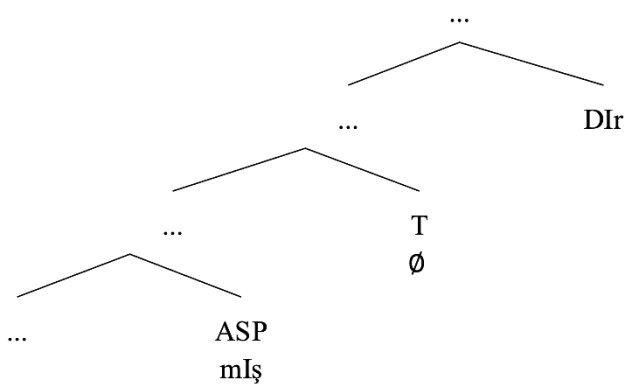
First, as Kelepir (2001) has already argued, there are two different *-mIş* suffixes: one of them expresses evidentiality and occupies a higher place in the TAM hierarchy above the copula, and the other *-mIş* expresses perfective aspect and occupies a lower position in the hierarchy under the copula.[12] *-DIr* attaches to the copula which comes after the perfective *-mIş*. On the other hand, after *-I/Ar* takes the copula, the evidential *-mIş* may be attached to the verb. (34) displays the simplified structures of the combination of evidential *-mIş* with the aorist and the perfective *-mIş* with *-DIr*.

(34) a.



[12] Kelepir (2001) acknowledges that evidential *-mIş* may also express perfective aspect, but she emphasizes that the perfective meaning is not always present and cannot be interpreted without the evidential meaning.

b.



The second issue was that Kelepir (2001) categorizes *-(y)Abil* as a Group 1 marker, but it cannot be combined with *-DIr* unlike other Group 1 markers. I have shown that *-(y)Abil* does not display the same characteristics as the other Group 1 markers. First, it cannot form finite verbs by itself, which means that the copula does not attach after *-(y)Abil*. I have shown that *-(y)Abil* can be combined with all the other Group 1 and 2 markers, and it is located below them, even below the modality marker *-mAlI*.

Moreover, the tests which Kelepir (2001) applies to Group 1 markers do not give out the same results when applied to *-(y)Abil*. In fact, all the facts about double negation, suspended affixation, and embedding under the nominalizers have shown that *-(y)Abil* displays the opposite behavior of Group 1 markers. Therefore, I have revised Kelepir's (2001) Group 1 and Group 2 markers as shown in Table (8). In this revised version, I have excluded *-(y)Abil* from both Group 1 and Group 2 and added the evidential *-mIş* to Group 2 markers.

Table 8. The Revised Group 1 and Group 2 TAM Markers

Group 1 TAM Markers
-(I)yor
-EcEk
-mIş (PF)
-I/Ar
-mAlI

Group 2 TAM Markers
-DI
-sE
-mIş (EV)

After these minor revisions, it is now possible to say that *-DIr* attaches to the copula, which the Group 1 TAM markers are inflected with. On the other hand, *-I/Ar* attaches below the copula before Group 2 markers or after *-(y)Abil*. I have given MOD_{12} as the abstract morpheme which surfaces as either *-DIr* or *-I/Ar*. MOD_{12} surfaces as *-DIr* following a copula, i.e., after a non-verbal predicate and Group 1 TAM markers, and MOD_{12} surfaces as *-I/Ar* elsewhere.

(35) a. $[MOD_{12}] \rightarrow$ DIr / COP _

b. $[MOD_{12}] \rightarrow$ I/Ar / elsewhere

Even though the aorist is a Group 1 marker, and as per my argument, *-DIr* should be able to attach to it, the combination of *-I/Ar* and *-DIr* is not possible. The reason why *-DIr* cannot attach to the copula after the aorist is that *-DIr* and *-I/Ar* fulfill the same functions. This fact is in support of my argument that *-DIr* and *-I/Ar* are allomorphs of the same morpheme; therefore, they cannot occur together.

(36) Leyla koş – ar – ∅ – (*dır).

Leyla run – AOR – COP – (*dIr)

'Leyla runs.'

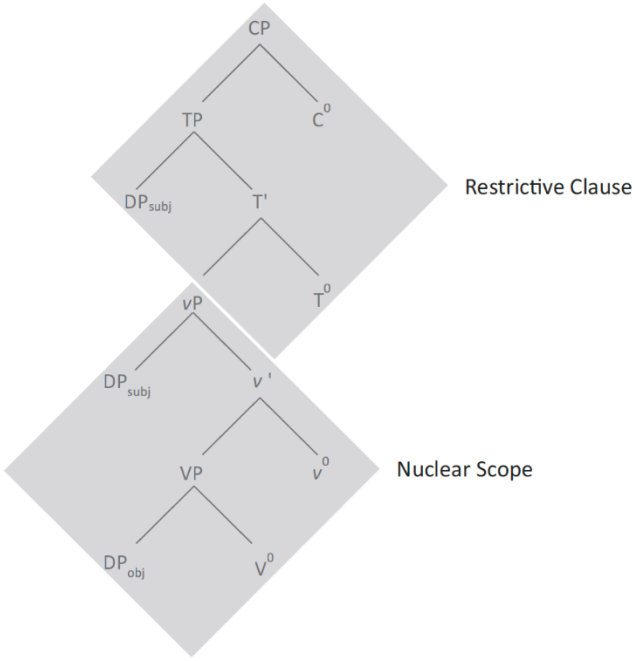
4.5 A proposal for the distinct readings of *-DIr* and *-I/Ar*

Even though the different functions of *-DIr* have been acknowledged by several authors in previous research (Sansa, 1986; Underhill, 1976; Kornfilt, 1997; Göksel & Kerslake, 2005; Karakoç, 2014), there are few proposals attempting to explain how *-DIr* can be interpreted as both generic and epistemic. Özgen (2021) gives a syntactic account differentiating between *-DIr*'s fact-reporting and epistemic functions (generalizing and predictive functions in his work). In this section, I describe Özgen's (2021) proposal and adapt it to account for the fact-reporting and epistemic functions of both *-DIr* and *-I/Ar*.

Drawing from Kratzer's (1995) distinction of stage-level and individual-level predicates and Diesing's (1992) Mapping Hypothesis, Özgen (2021) proposes that the position of the external argument of a sentence with *-DIr* determines its interpretation as either fact-reporting or epistemic.

Following Chomsky's (2001) Phase Theory and Citko's (2014) implementation of Diesing's (1992) Mapping Hypothesis, Özgen (2021) presents the construction in (37) for Turkish sentences with a CP phase and a vP phase.

(37) *Phasal Mapping Hypothesis*

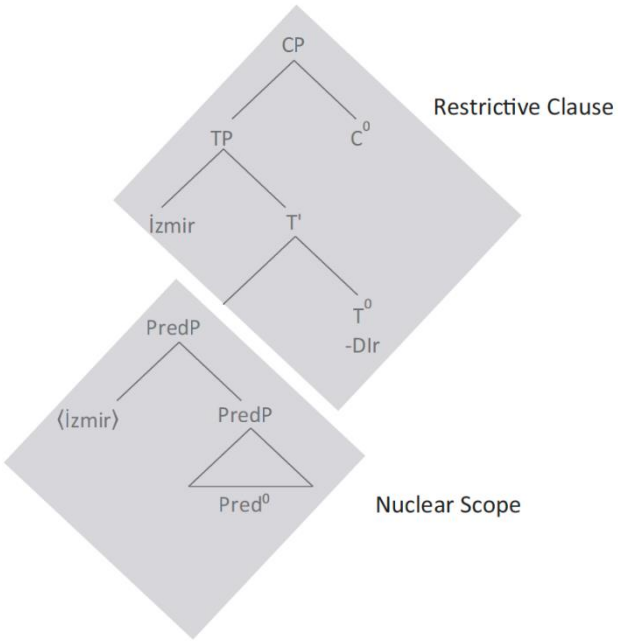


(Özgen, 2021)

Özgen (2021) proposes that the distinction of stage-level and individual-level predicates can be used to disambiguate the different meanings of *-DIr*. He argues that whenever *-DIr* is used with an individual-level predicate, the external argument moves to Spec TP, i.e. to the CP phase, to take scope over *-DIr*. For example, the external argument of the sentence in (38) moves to Spec TP of the construct to take scope over *-DIr* as seen in (39). Therefore, the sentence is interpreted as generic.

(38) İzmir Türkiye – nin bir il – i – dir.
İzmir Turkey – GEN a city – POSS.3SG – DIr
'İzmir is a city in Turkey.' (Özgen, 2021)

(39) 'İzmir is a city in Turkey.'



(Özgen, 2021)

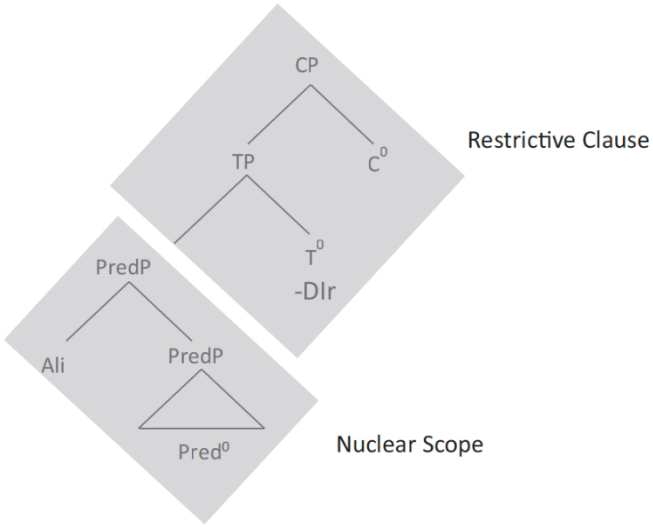
On the other hand, whenever *-DIr* is used with a stage-level predicate with a spatiotemporal reference, the external argument stays in situ in Spec PredP. For instance, the external argument in sentence (40) stays in situ, and *-DIr* takes scope over the external argument; thus, *-DIr* is interpreted as an epistemic modal.

(40) (İş – e gel – me – di.) Ali hasta – dır.

(work – DAT come – NEG – PST.) Ali sick – DIr

'(Ali hasn't come to the office.) Ali may be sick.' (Özgen, 2021)

(41) '(Ali hasn't come to the office.) Ali may be sick.'



(Özgen, 2021)

As for ambiguous sentences such as the one in (42), which can be interpreted either as generic or epistemic, Özgen (2021) argues that if the external argument moves to Spec TP, the sentence is interpreted as generic, but if it stays in situ, the sentence is interpreted as epistemic. Özgen (2021) claims that the former case includes a stage-level predicate with a generic interpretation, and the latter case includes a stage-level predicate with a spatiotemporal reference.

(42) Ali öğretmen – dir.

Ali teacher – DIr

(i) Ali is a teacher.

(ii) Ali might be a teacher. (Özgen, 2021)

Drawing from Özgen's (2021) proposal, I argue that the different readings of *-DIr* and *-I/Ar* can be accounted for syntactically. However, I argue that instead of the position of the external argument in the syntax, the position of *-DIr* and *-I/Ar* determines whether the sentence's reading is fact-reporting or epistemic.

It is not uncommon for modal expressions to have multiple meanings. For example, just like English *must*, *-mAlI* in Turkish has both deontic and epistemic uses. On the other hand, *-(y)Abil* has epistemic, circumstantial, and deontic uses similar to English *can*.

(43) Çorba sıcak ol – malı.

soup hot AUX – OBLG

'The soup must be hot.' (epistemic and deontic) (Sansa 1986)

(44) Ali futbol oyna – yabil – ir.

Ali football play – (y)Abil – AOR

(i) It is possible for Ali to play football.

(ii) Ali is able to play football.

(iii) Ali is allowed to play football.

While the uses in (43) and (44) can be interpreted ambiguously with all the possible meanings of the modals, this is not always the case. As described in Chapter 2, the combinations of *-DIr* with various TAM markers lead to different meanings. Similarly, the combinations of *-(y)Abil* and *-mAlI* with other TAM markers show variance. For example, when *-(y)Abil* is used under other aspectual markers and the conditional *-sE*, it loses the epistemic reading and can be interpreted as circumstantial or deontic. However, *-(y)Abil* can only be interpreted as circumstantial when it is used under evidential *-mIş* and the past marker *-DI*.

(45) *-(y)Abil* as deontic and circumstantial:

a. Ali gitar çal – abil – iyor.

Ali guitar play – (y)Abil – IMPF

(i) 'Ali is able to play the guitar.'

(ii) 'Ali is allowed to play the guitar.'

b. Ali gitar çal – abil – ecek.

Ali guitar play – (y)Abil – FUT

(i) ‘Ali will be able to play the guitar.’

(ii) ‘Ali will be allowed to play the guitar.’

c. Ali gitar çal – abil – se ben bil – ir – di –

Ali guitar play – (y)Abil – COND I know – AOR – PST –

m.

1.SG

(i) ‘If Ali was able to play the guitar, I would know it.’

(ii) ‘If Ali was allowed to play the guitar, I would know it.’

(46) *-(y)Abil* as circumstantial:

a. Ali gitar çal – abil – miş.

Ali guitar play – (y)Abil – EV

‘Apparently, Ali was able to play the guitar.’

b. Ali gitar çal – abil – di.

Ali guitar play – (y)Abil – PST

‘Ali was able to play the guitar.’

On the other hand, whenever *-(y)Abil* is used with the auxiliary verb *ol-*; i.e. in a higher place in the hierarchy, it is interpreted as epistemic.

(47) *-(y)Abil* as epistemic:

Ali gitar çal – ıyor ol – abil – ir.

Ali guitar play – IMPF AUX – (y)Abil – AOR

‘It is possible that Ali is playing the guitar.’

-mAlI is interpreted as deontic whenever it is used under *-DI*, *-mIş*, and *-sE*. On the other hand, *-mAlI* can be interpreted both as deontic and epistemic when it is

used with the auxiliary verb *ol-* following a non-verbal predicate as in (49) and only epistemic with the auxiliary verb *ol-* following an aspectual marker as in (50).

(48) *-mAlI* as deontic:

a. Ali gitar çal – malı – y – dı.

Ali guitar play – OBLG – COP – PST

'Ali had to play the guitar.'

b. Ali gitar çal – malı – y – mış.

Ali gitar play – OBLG – COP – EV

'Apparently, Ali had to play the guitar.'

c. Ali gitar çal – malı – y – sa sessiz ol.

Ali guitar play – OBLG – COP – COND quiet AUX

'If Ali has to play the guitar, be quiet.'

(49) *-mAlI* as deontic and epistemic:

Çorba sıcak ol – malı.

soup hot AUX – OBLG

'The soup must be hot.' (epistemic and deontic) (Sansa 1986)

(50) *-mAlI* as epistemic:

Ali gitar çal – ıyor ol – malı.

Ali guitar play – IMPF AUX – OBLG.

'Ali must be playing the guitar.'

According to the modal interpretations I have described in (45), (46), (47), (48), (49), and (50), the epistemic construal of the modal suffixes *-mAlI* and *-(y)Abil* seem to be available only when they are associated with heads higher up in the TAM hierarchy, relative to the circumstantial and deontic construals of these modal suffixes.

-DIr's readings, on the other hand, are only non-ambiguous with *-(I)yor*, *-mEktE*, and *-mAlI*. When *-DIr* occurs with *-(I)yor*, its reading is only epistemic, but when it occurs with *-mEktE* and *-mAlI*, *-DIr*'s reading is only fact-reporting.

(51) Bu tesis – te elektrik üret – il – mekte – dir.
this facility – LOC electricity produce – PASS – IMPF – DIr
'It is a fact that electricity is being produced in this facility.'
*'I presume that electricity is being produced in this facility.'

(52) Bu tesis – te elektrik üret – il – iyor – dur.
this facility – LOC electricity produce – PASS – IMPF – DIr
'I presume that electricity is being produced in this facility.'
*'It is a fact that electricity is being produced in this facility.'

(53) Çorba sıcak ol – malı – dır.
soup hot AUX – OBLG – DIr
'The soup must be hot.' (deontic *-mAlI* and fact-reporting *-DIr*)

Since *-DIr*'s readings in most morphosyntactic environments are ambiguous between fact-reporting and epistemic, there is no clear evidence for determining whether its height correlates with the construal that *-DIr* is assigned to. Moreover, as *-(I)yor*, *-mEktE*, and *-mAlI* cannot be combined, presumably because they are all Group 1 markers as in Kelepir (2001), there is no way to determine if one is higher than the other in the TAM hierarchy. Nonetheless, *-I/Ar*'s use with *-(y)Abil* may provide some evidence in terms of the sequence of fact-reporting and epistemic functions. If we make the assumption that in the combination of *-(y)Abil* and *-I/Ar*, the deontic, epistemic, and circumstantial modal readings solely come from *-(y)Abil*, then *-I/Ar*'s function must be identified as fact-reporting (i.e. generic).

(54) Ali futbol oyna – yabil – ir.

Ali football play – (y)Abil – AOR

(i) It is possible for Ali to play football.

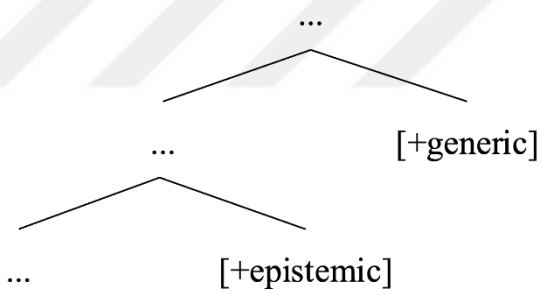
(ii) Ali is able to play football.

(iii) Ali is allowed to play football.

Tentatively, I argue that whenever the morpheme realized as *-DIr* or *-I/Ar* is merged higher in the hierarchy, it is interpreted as generic, and whenever it is merged lower in the hierarchy, it is interpreted as epistemic.

Accordingly, I argue that (i) the functional sequence must place epistemic below generic as seen in (55), (ii) whenever a modal has allosemy, i.e. more than one reading, the meaning is determined according to where it is merged in the syntactic tree.

(55)



It is important to note that this is just a preliminary account and not a fully fleshed-out one. Therefore, I did not specify which position on the tree the modals are merged to get their specific readings. There needs to be further empirical evidence supporting this sequence, as well as the exact location where the modals are merged in the tree.

4.6 Conclusion

In this chapter, I have argued that *-DIr* and the aorist *-I/Ar* are allomorphs of a single morpheme. I have shown that just like *-DIr*, *-I/Ar* has two fundamental functions: fact-reporting and epistemic modality. I have shown that the sub-functions of fact-reporting, i.e., reporting facts, expressing generalizations and habits, and establishing authority, can be fulfilled both with *-DIr* and *-I/Ar* in different morphosyntactic environments. Furthermore, the epistemic use of *-I/Ar* shows parallelism with *-DIr* in that they both display variability in quantificational force. Moreover, from a historical perspective, *-DIr* and *-I/Ar* are said to descend from the same auxiliary verb from old Turkic *tur-ur* (Lewis, 1967), which can be further evidence for the claim that they are allomorphs.

I have discussed the generic uses of *-DIr* and *-I/Ar* and showed that both for generic sentences with kind-referring NPs and for characterizing generics *-DIr* and *-I/Ar* may be used in Turkish. For kind predication in the present tense, *-DIr* and *-I/Ar* are used exclusively. For kind predication and characterizing generics which make reference to the future, the future marker *-EcEk* is used, which can optionally be followed by *-DIr*. For kind predication referring to the past tense, either the combination of *-mIş* and *-DIr* or simply past marker *-DI* may be used.

For characterizing generics referring to the past tense, the combination of *-I/Ar* and the past marker *-DI* is used. For characterizing generics in the present tense, in addition to *-DIr* and *-I/Ar*, the progressive marker *-(I)yor* can be used. However, while sentences with *-I/Ar* express rule-like generalizations which project to the future and non-actualized generalizations, sentences with *-(I)yor* express incidental habits (Dikmen & Demirok, under review). Looking at these facts, what I have described as the fact-reporting use of *-DIr* and *-I/Ar* may actually be the generic

function. It may also explain the reason why these suffixes have two very different uses as it is common for constructions in language which express genericity to have other functions as well (Dahl, 1995).

The claim that *-DIr* and *-I/Ar* are in complementary distribution is not a novel one. Sansa (1986) argues that *-DIr*'s use with non-verbal predicates and *-I/Ar*'s use with verbal predicates are totally parallel. Temürcü (2004) argues *-DIr* and *-I/Ar* are in complementary distribution, for even though *-DIr* belongs to post-clitics, and *-I/Ar* belongs to the category of bound markers, they cannot be combined. Extending on these claims, I have shown that not only *-DIr* and *-I/Ar* cannot be combined, but also their use with other TAM markers is in complete complementary distribution.

To show this, I have employed Kelepir's (2001) Group 1 and Group 2 TAM markers. I have shown that *-DIr* is only compatible with Group 1 markers while *-I/Ar* can be used elsewhere with Group 2 markers. According to Kelepir's (2001) analysis, I have argued that *-DIr* is actually attached after the copula which the Group 1 markers take, and *-I/Ar* itself takes a copula as it is a Group 1 marker, which can then be attached to a Group 2 marker. In theory, it should be possible to attach *-DIr* after the aorist since it is a Group 1 marker; however, *-DIr* and *-I/Ar* cannot be combined. In line with Temürcü (2004), I have argued that the reason why they cannot not be combined is that they fulfill the same functions and are in complementary distribution.

In conclusion, I have argued that *-DIr* and the aorist *-I/Ar* are allomorphs of the same morpheme due to the facts that (i) both *-I/Ar* and *-DIr* fulfill the same functions as fact-reporting/generic and epistemic modality, (ii) one has no function which the other cannot fulfill, (iii) both *-DIr* and *-I/Ar* display quantificational variation in their epistemic uses, (iv) *-DIr* and *-I/Ar* are in complementary

distribution in the morphosyntactic environments in which they are used, and (v) they descend from the same old Turkic auxiliary verb *tur-ur*.

Finally, in order to account for the difference between generic and epistemic readings of *-DIr* and *-I/Ar*, I have adapted Özgen's (2021) proposal for *-DIr*. Özgen (2021) argues that the different readings of *-DIr* relate to the syntax. He proposes that the position of the external argument determines how *-DIr* is interpreted. If the external argument moves upwards to Spec TP and scopes over *-DIr*, it is interpreted as generic. However, if the external argument stays in situ and *-DIr* scopes over the external argument, it is interpreted as epistemic.

I have argued that instead of the position of the external argument, the position of *-DIr* and *-I/Ar* determines whether they will be interpreted as generic or epistemic. Drawing from the use of other modal expressions in Turkish, I have argued that the modal sequence of Turkish is deontic/circumstantial > epistemic > generic. Therefore, whenever the morpheme realized as *-DIr* and *-I/Ar* is merged lower in the tree, the reading is epistemic, and otherwise, its reading is generic.

To conclude, I argue that Turkish has an abstract morpheme with two allomorphs (*-DIr* and *-I/Ar*) and two allosemes (epistemic modal and generic operator).

CHAPTER 5

CONCLUSION

The main goal of this thesis is to develop a formal semantic analysis on the force variability associated with the suffix *-DIr*, building on insights in the previous research. I have first described the different functions of *-DIr* as fact-reporting and epistemic modality. I have discussed the morphosyntactic distribution of *-DIr* and detailed the possible meanings with the combination of *-DIr* and other TAM markers.

I have shown that by applying tests from Faller (2002) and Matthewson et al. (2007), *-DIr* behaves as an epistemic modal, contrary to the claims that it is an illocutionary marker. I have implemented Peterson's (2009) proposal to *-DIr*, claiming that the information in the ordering source determines the quantificational force of the modal. If the ordering source is empty, *-DIr* gets its default interpretation, which is universal; if not, it is weakened, leading to an existential reading.

I have also argued that the aorist *-I/Ar* and *-DIr* are allomorphs. There has been previous research which claimed *-DIr* and *-I/Ar*'s uses are parallel, or they are in complementary distribution (Sansa, 1986; Temürcü, 2004). I have shown that both *-DIr* and the aorist have the same fact-reporting/generic and epistemic functions. Moreover, they both display quantificational variation in their epistemic use. I have also shown that *-DIr* and *-I/Ar* are in complementary distribution with Kelepir's (2001) Group 1 and Group 2 TAM markers.

I have adapted Özgen's (2021) proposal for the different interpretations of *-DIr* in order to account for both *-DIr* and *-I/Ar*'s generic and epistemic readings. While Özgen (2021) argues that the position of the external argument determines the

interpretation of *-DIr*, I have argued that instead of the position of the external argument, the position of *-DIr* and *-I/Ar* in the tree determines the interpretation as either generic or epistemic. Drawing from the use of other modals in Turkish, I have argued that whenever *-DIr* and *-I/Ar* are merged lower in the tree, their reading is epistemic, and whenever they are merged higher, their reading is generic.

While the syntactic account I have adapted from Özgen (2021) seems to account for the different readings of *-DIr* and *-I/Ar*, there is no evidence of the decisive kind regarding the question of whether the fact-reporting *-DIr* and *-I/Ar* and epistemic *-DIr* and *-I/Ar* are different suffixes with different semantic entries, or if there is a single syncretic entry for these suffixes, or they are simply allosemes of the same morpheme, as hypothesized here. The fact that *-DIr* and *-I/Ar* display parallelism with respect to their functions as well as force variability supports the idea that we are dealing with one morpheme with more than one meaning, hence, the allosemy account suggested in this work. Needless to say, further research is required to establish which of the options is the best approach to account for the intricate patterns reported in this study.

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