TIME AND ASPECT IN TURKISH SIGN LANGUAGE (TİD):

MANUAL AND NONMANUAL REALIZATIONS OF 'finish'

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2016

TIME AND ASPECT IN TURKISH SIGN LANGUAGE (TİD): MANUAL AND NONMANUAL REALIZATIONS OF 'finish'

Thesis submitted to the

Institute for Graduate Studies in Social Sciences

in partial fulfillment of the requirements for the degree of

Masters of Arts

in

Linguistics

by

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Boğaziçi University

2016

ABSTRACT

Time and Aspect in Turkish Sign Language (TİD):

Manual and Nonmanual Realizations of 'finish'

The need to study aspectual marking in TİD lies in the fact that a small number of studies in the literature mention manual aspectual markers but do not provide a detailed analysis. Understanding the aspectual marking in TİD will present a comprehensive understanding of the event structure in TİD and how it is mapped to syntax. In this thesis, I discuss the implications of my findings for aspect projections in Turkish Sign Language (TİD). I especially focus on viewpoint aspect based on an empirical study that investigates how the manual aspect marker BİT 'finish' and the nonmanual marker 'bn' differ in terms of their aspectual functions. First of all, I present data that these signs are functional signs used to mark viewpoint aspect in TİD. The evidence comes from empirical data presenting their interaction with negation. Secondly, I discuss that the manual marker BİT has a significantly different aspectual function from the nonmanual marker ‘bn’ by providing their sub-categorizational frames. Even though Dikyuva (2011) analyzed 'bn' as a completive marker, I show that 'bn' is compatible with both termination and completion. Building upon the syntactic representation proposed for TİD by Gökgöz (2009), I propose that TİD has a set of aspectual projections and BİT and 'bn' enter the syntactic composition at different levels of hierarchical structure of these functional categories. These findings will shed light on the discussions and studies on event structure, complexity in the verbal domain, and how semantic notions interact with syntax.

ÖZET

Türk İşaret Dili'nde (TİD) Zaman ve Görünüş:

'bit'in El ve Eldışı Gerçekleştirmeleri

Bu tezde, el hareketinin BİT ve el dışı hareketin 'bn' anlambilimsel düzanlam farklarını gösteren deneysel veriyi sunarken bulguların Türk İşaret Dili'ndeki (TİD) görünüş yansıtması için olan çıkarımlarını tartışıyorum. Öncelikle, bu işaretlerin işlevsel işaret olduklarını ve bakış açısı görünüşü belirteçleri olduklarını gösteren veriyi sunuyorum. Bu konudaki kanıt işaretlerin olumsuzluk ile olan ilişkilerini gösteren deneysel veriden gelmektedir. Daha sonra, alt ulamlama çerçevelerini sunarak el belirtecinin el dışı belirteçten farklı bir anlambilimsel düzanlamı olduğunu tartışıyorum. Dikyuva'nın (2011) aksine, el dışı belirtecin sadece sondurum ile değil ama durum ve olaylar arasında ayrım yaparak bütün olay ile uyum gösterdeğini öneriyorum. Sonra, bu iki işaret arasındaki farka dayalı olarak sözdizimsel birleşime farklı düzeylerde dahil olduklarını ileri sürüyorum, böylelikle Gökgöz (2009) tarafından önerilen sözdizimsel gösterime dayanarak TİD'in karmaşık bir görünüş yansıtması vardır. TİD'deki görünüş belirtilmesini çalışmamdaki amaç alanyazında bu belirteçlerin detaylı analizini vermeden onlardan bahseden çok az çalışmanın olmasıdır. TİD'deki görünüş belirtilmesinin anlaşılması TİD'in olay yapısının ve onun sözdizimine nasıl yansıdığının daha iyi anlaşılmasını sağlayacaktır. Bulgularımın olay yapısını, eylemcil alandaki karmaşıklığı ve anlambilimsel kavramların sözdizimi ile nasıl bir ilişkisi olduğunu inceleyen çalışmalara ve tartışmalara katkıda bulunacağını ümit etmekteyim.

ACKNOWLEDGEMENTS

First and foremost, I am truly indebted to my thesis advisor Assoc. Prof. Meltem Kelepir for her endless patience and encouragement to my never ending questions. I had enriching discussions with her from the initial phases of this study to its final version. I am thankful her to provide me space and time to develop my own questions and argumentations in this study. She always found time for my last minute questions although she had a busy schedule. She is always there for me whenever I need her not only for my academic career but also for difficult times in my life. She is not only an advisor but also like a friend for me.

I wish also to thank my thesis committee Prof. Aslı Göksel and Assoc. Prof. Engin Arık. I had my most fruitful and fun discussions with Aslı Göksel during my master years and the development of the thesis. She always asks the questions which one has not thought before and presents different perspectives. I learned from her the skill to look at a problem from a different perspective. Engin Arık presented me a different way of thinking on the issues which we discussed. I benefited a lot from his vast knowledge.

I also express my gratitude to my professors in the Linguistics Department for their support and understanding during my undergraduate and graduate courses. I thank Prof. Eser Erguvanlı Taylan, Assist. Prof. Marcus A. Pöchtrager and Assoc. Prof. Mine Nakipoğlu learned how to deal with the data, ask questions and discuss on phenomena from them. Prof. A. Sumru Özsoy is the person who I took my first course Sign Language and Linguistics during my undergraduate courses and she encouraged me to go on my studies on sign linguistics whenever I felt that I could not. I am also grateful to Assoc. Prof. Balkız Öztürk who made me truly love linguistics and applied for the Master's program. I had also fruitful discussions while

writing this study. Assoc. Prof. Elena Guerzoni is the person who I wish to spend more time and have the chance to take courses from. She always found time to teach me semantics and discuss my data. She had the patience to figure out both the data and what I am trying to tell. She is the first person who showed me that I can understand math and semantics.

I am also indebted to my friends in the lab Aslı Özkul, Emre Hakgüder, and Hüner Kaşıkara. I had my most friendly and truthful working environment thanks to their patience, love, and kindness. I know that Derya Nuhbalaoğlu is always there for me to share my enthusiasm even on a basic topic. She became like my elder sister rather than just a friend. Süleyman Taşçı is one of the kindest friends who brings posters and handouts from a cross-continental conference. Hilal Yıldırım is always a caring and warm-hearted roommate. Ömer Faruk Demirok is the most helpful TA I have ever met and he is the person who encouraged me to continue in linguistics. Ömer Eren and Duygu Göksu are the ones who I had most delicious lunches with. They witnessed all the process of the writing this thesis. It will not be wrong to call Ömer as my 'thesis-buddy'. He is the most helpful and kind person I have ever met. I am also thankful to Begüm Avar. Without her, I could not finish my sample study and thesis. She had the talent to find joy even when she tried to figure out my writing skills and organization. Lastly, I want to thank Elvan Tamyürek Özparlak, Jale Erdul and Gül Yiğit for being great officemates and sharing their insights and knowledge on TİD.

My heartfelt thanks also go to my friends Ceyda Yaba, Merve Saraç, Merve Gizem Cevheroğlu, Meltem Olgaç, Seda Yürük and Yezdan Atılgan. They had the patient which we call 'prophet patience' in Turkish whenever I asked them their judgments for Turkish. I am grateful to Ceyda, Merve and Merve to create me warm

and happy home. I felt like I was at home thanks to their endless love and support. They are the joy of my life. They are the best friends one can ask for.

I would not be able to the person who I am if I did not have this big family and their support. The love of my parents Mehmet Karabüklü and Şerife Karabüklü, and my brother Hüseyin Karabüklü gave me the strength to pursue my dreams. They are always there for me whenever I need their support and doubt to go on. My father is always the source of my encouragement and I know he will be. I know he will be with me even though I cannot be able to see him anymore and I will miss him a lot. I dedicate this thesis to him, 'babacık'.

This thesis is supported by TÜBİTAK research project number 114E263: *Avatar Animation and Machine Translation System from Turkish to Turkish Sign Language*

to babacık and the ones who we put walls around

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ABBREVIATIONS

TERMS RELATED TO TIME

ET	Event Time
RT	Reference Time
ST	Speech Time
UT	Utterance Time

SIGN LANGUAGES

ASL	American Sign Language	
BSL	British Sign Language	
CSL (Shanghai)	Chinese Sign Language (Shanghai)	
HKSL	Hong Kong Sign Language	
ISL	Israeli Sign Language	
LIM	Egyptian Sign Language	*Lugha^{t}al-ishara^{t}al-Misriya*
LIS	Italian Sign Language	*La Lingua Italiana dei Segni*
LSE	Spanish Sign Language	*La Lengua de Signos Espanola*
LSQ	Quebec Sign Language	*Langue des signes québécoise*
NGT	Sign Language of the Netherlands	*Nederlandse Gebarentaal*
TİD	Turkish Sign Language	*Türk İşaret Dili*

NONMANUAL MARKERS

NMM	Nonmanual marker
ap	PUFFED CHEEKS
bn	TONGUE PROTRUDING
bt	BODY TURN
ee	TONGUE IN TEETH
er	EYEBROW RAISE

es EYE SQUINT

hb HEAD BACKWARD

hf HEAD FORWARD

ht HEAD TILT

lele TONGUE MOVES UP AND DOWN

neg NEGATION

top TOPICALIZATION

rhn REPETITIVE HEAD NOD

sb SHOULDER BACKWARD

sf SHOULDER FORWARD

shn SINGLE HEAD NOD

PHRASES

AspP Aspect Phrase

CP Complement Phrase

DP Determiner Phrase

h-AspP Higher Aspect Phrase

FocP Focus Phrase

m-AspP Middle Aspect Phrase

TP Tense Phrase

VP Verb Phrase

PovP Point of View Phrase

TvP Truth Value Phrase

CONVENTIONS

GLOSSING CONVENTIONS

IX_1, IX_2, IX_3, ...	Pointing indexicals, 1,2,3 refers to persons.
IX-$POSS_1$, IX-$POSS_2$,...	Possessive pointing indexicals, 1,2, refers to persons.

Conventions Regarding the Spreading Domain of Nonmanual Markers and the Encoding of Agreement Verbs

The spreading domain of a nonmanual marker is indicated as a continuous line ending in the abbreviation of the nonmanual marker. Agreement verbs such as GIVE below display the encoding of the movement path between an entity a and an entity b which refer to first person and third person in the example below. These indexicals indicate two different loci in the signing space and they can be signed in the sentence before signing the verb. In the sentences where this situation is observed, the referential antecedents of the two ends of the verb are indicated as a subscript coindexation on the overt proper names.

_____ht

_____ap

FOOD $_1$GIVE$_3$ EVER

"I have not ever given the food."

CHAPTER 1

INTRODUCTION

The motivation for the thesis is to examine how TİD encodes aspectual information in the verbal domain. In particular, this study focuses on a manual marker, BİT[1] 'finish', and a nonmanual marker, 'bn', which can occur simultaneously. Aiming to shed light onto the semantic nature of these two markers, this paper mainly revolves around the following three questions: (i) Is 'bn' the mouthing of BİT and do they uniformly encode the same aspectual notion? (ii) If they are distinct aspectual markers, in what type of constructions are they allowed to co-occur?, and, finally, (iii) What do the environments these two markers occur in tell us about their semantic properties?. Based on the discussions presented in the following sections of this thesis, I will propose that both signs are viewpoint aspectual markers, and in particular that they both express perfectivity. Yet a thorough analysis of the behavior of these two markers in a variety of contexts shows that these two are to be distinguished on semantic grounds. In particular, the findings of this study indicate that the manual marker, BİT, sees the internal temporal structure of the event and occurs with the verb phrase if the event encodes a change of state and a process. On the other hand, the nonmanual marker 'bn' makes a distinction between states and events. It occurs with the verb phrases expressing the events which denote agentivity or causation. It takes the whole event as an argument. Based on these differences, I will propose that TİD syntax has two different Asp projections. The nonmanual marker stands in the upper AspP which corresponds to outer aspect while the manual marker stands in the lower AspP which corresponds to inner aspect.

[1]Even though this causes some inconsistency in the choice of glossing language, for some of the aspectual markers, I will adapt the spoken language spelling; e.g., FATTO in LIS (Zucchi et al., 2010) and BİTTİ in TİD (Zeshan, 2003) for 'done'.

The studies in the literature have shown that sign languages apply various strategies to convey aspectual information such as internal modification of the verb, nonmanual markers, and manual markers (Pfau, Steinbach, & Woll, 2013). Examples of all these strategies will be briefly presented, however, the main focus will be the discussion of manual and nonmanual markers. Manual aspectual markers have been reported cross-linguistically to encode perfective or perfect as FINISH in American Sign Language (ASL) (Duffy, 2007; Fischer & Gough, 1999; Rathmann, 2005), FATTO 'done' in Italian Sign Language (LIS) (Zucchi, Neidle, Geraci, Duffy, & Cecchotto, 2010), ALREADY in Israeli Sign Language (ISL) (Meir, 1999; Meir & Sandler, 2008), FINISH in Hong Kong Sign Language (HKSL) (Tang, 2009), FINISH in Egyptian Sign Language (LIM) (Fan, 2014), FINISH in Chinese Sign Language (CSL (Shanghai)) (Liu, 2016), and FINISH#pah in Kata Kolok which is a village sign language in Bali (de Vos, 2012). In addition to perfective markers, Fan (2014) has also noted that LIM has a manual sign for imperfective or contuative, glossed as CONTINUE. The main tests adopted to investigate these markers' specific aspectual functions test their compatibility with different tense markers or time adverbials, and some lexical aspectual categories, contexts including termination or completion meanings.

The manual markers are considered to have been grammaticalized from lexical verbal or adverbial signs like FINISH in ASL (Duffy, 2007; Fischer & Gough, 1999; Rathmann, 2005) and FATTO in LIS (Zucchi et al., 2010). In terms of their phonology, a slight difference may be observed between the lexical and functional sign like change in handedness. Namely, the functional sign is signed with the non-dominant hand while the lexical one is signed with the dominant hand. In terms of morphology, it is difficult to distinguish functional signs from lexical ones

as sign languages are not agglutinative languages. Thus, Pfau et al. (2013) argue FATTO as a free aspectual marker. To determine their functions, the crucial empirical evidence is their compatibility with sentential negation. Crosslinguistically in sign languages, aspectual functional signs are incompatible with sentential negation while their lexical counterparts are (Fischer & Gough, 1999; Meir, 1999; Zucchi et al, 2010). The same observation holds for TİD as seen in the examples in (1). (1a) contains FINISH as a lexical verb and the proposition is negated with sentential negation NOT. On the other hand, (1b) contains the aspectual marker BİT 'finish' and it is incompatible with the sentential negation and requires a different sign which is a nonmanual marker, puffed cheeks 'ap' (Dikyuva, Makaroğlu & Arık, 2015) as seen in (1c).

(1) a. ASLI EAT FINISH NOT

"Aslı did not finish eating."

b. *ASLI EAT BİT NOT

"Aslı did not eat (it). / Aslı has not eaten (it.)"

____ap

c. ASLI EAT

"Aslı did not eat (it). / Aslı has not eaten (it)."

In the literature on TİD, Dikyuva (2011) and Zeshan (2002, 2003) are the only studies that mention a number of manual aspectual markers, TAMAM 'done, complete, ready', BİTTİ 'finish(ed)' (Zeshan, 2003, p. 50-1), and END (Dikyuva, 2011, p. 25). Zeshan points out that the functions of these markers are not clear. Dikyuva (2011), on the other hand, mainly focuses on the nonmanual aspect markers in TİD such as 'bn' (tongue protruding), 'ee' (tongue in theet), and 'lele' (tongue moves up and down continuously). He argues that 'bn' is a completive marker, 'ee' is

an inceptive marker, and 'lele' is a continuative marker as seen in the examples in (2) adapted from Dikyuva (2011, ex. 3, 6 and 7 respectively) after tested these markers with different lexical aspectual categories as state, process and action.

(2) a. ___bn

IX_1 ENGLAND GO

" I have been to England."

b. ____ee

MOTHER TELL GO MARKET SHOPPING

"Mother began to say, go shopping at the market."

c. _____lele

IX_1 AGAIN EXPLAIN FED UP

"I fed up of explaining over and over."

The present analysis has shown that the manual marker BİT accompanied by the nonmanual marker 'bn' is used in perfective contexts. Building upon the findings, this thesis tries to answer whether these two markers have the same aspectual function. The difference between them will be depicted via their compatibility with different aspectual categories such as states, achievements, accomplishments, and activities as well as their co-occurrence with the contexts conveying different time references.

Based on the findings, I will propose that these signs have different denotations. That is, the manual marker BİT interacts with the internal structure of the events and marks the endstate if the event denotes a change of state. On the other hand, the nonmanual marker 'bn' makes a distinction between states and events. It takes the whole event as its argument and denotes that the event is terminated by not seeing into the internal structure of the event. It is compatible with events which

denote agentivity or causation. The distinction becomes clear also with distribution. In other words, the nonmanual marker 'bn' can co-occur with the distributive and continuative morphemes. By adopting from Tenny (2000) I, based on empirical data, suggest that TİD syntax has two distinct aspect projections. The manual marker stands in the head of the lower AspP corresponding the inner aspect while the nonmanual marker stands in the head of the upper AspP corresponding to outer aspect.

The structure of the thesis is as follows. Chapter 2 presents the studies on tense and aspect in the literature of spoken languages, how the notions of tense and aspect are defined, and what tests are applied for these notions. In Chapter 3, I show how these notions are realized and tested in a visual modality, namely sign languages. Chapter 4 explains the designs and procedures of the studies in this thesis such as data elicitation process and grammaticality judgment tasks. I present the findings in Chapter 5. After presenting the findings on how internal modification is realized according to aspectual information, I introduce the tests for the manual sign BİT and the nonmanual sign 'bn' and discuss their implications on their aspectual functions. Additionally, I also propose a syntactic analysis capturing the difference between the two signs. Building upon these analyses, Chapter 6 provides a unified discussion about the implications. Finally, Chapter 7 states the results and suggests implications for further research.

CHAPTER 2

A BRIEF OVERVIEW OF TENSE AND ASPECT IN SPOKEN LANGUAGES

This chapter presents various views and discussions for tense and aspect in spoken languages. Firstly, it summarizes the notions used for tense and the arguments for these notions. Aspect is analyzed as situation and viewpoint aspect and the interaction of these notions is discussed. Building upon the notions tense and aspect, the definition of perfect and various accounts for it are also presented.

2.1 Tense

Events and situations cannot be separated from time. Tense may be considered to be the grammaticalized form of the time of the event expressed in a sentence. Comrie (1985) defines tense as the "grammaticalized expression of location in time" (p. 9). Languages can choose different strategies to encode time. Some languages can grammaticalize the time on verb and express it via inflection morphemes on the verb, some languages such as Germanic languages while other languages may encode time via time adverbials[2]. The latter group is referred to as tenseless languages. These languages include Burmese (Comrie, 1985), St'at'imcets (Matthewson, 2006), Paraguayan Guarani (Tonhauser, 2011), and Mandarin Chinese (Comrie, 1985; Higginbotham, 2009; Lyons, 1977). Categorizing languages as tensed or tenseless is one typological categorization. In terms of grammaticalization of tense, in the sense of Comrie (1985), languages can also be categorized as those which grammaticalize tense on verb and have different morphemes for "the absolute" (Comrie, 1985, p. 36) and "the relative" (Comrie, 1985, p.56) tenses.

[2] I will use the term "grammaticalized tense" for discussing languages which mark the tense information in their verbal domain rather than conveying time information via time adverbials.

When the languages which grammaticalize the time on the verb are analyzed, basically a three-way distinction is observed: past, present and future which are also referred to as the absolute tenses by Comrie (1985, p. 36). If we represent time as a line, events and situations have to be anchored to a point or a span on the timeline in order to be interpreted. A speaker can report an event or a situation in the past as in (3) below, in the present as in (4) or in the future as in (5). In other words, the event or the situation is anchored to the time line according to the viewpoint of the speaker.

(3) John ran in the race.

(4) John is running in the race.

(5) John will run in the race.

The time when the speaker utters the event or the situation is called the Utterance Time (UT) or Speech Time (ST). I will use the term Utterance Time (UT) in this thesis (Comrie, 1985; Binnick, 1991; Higginbotham, 2009; Reichenbach, 1947 among others). The ordering between UT and Event Time (ET) gives the "absolute tenses", in the sense of Comrie (1985; p.36-55). If ET coincides with UT this relation gives the present tense as illustrated in(3). However, it is not possible that all events occur exactly at the moment of the utterance. Although it is hardly possible to refer to an exact point in the time there are some verbs like *promise* as in (6) or *name* as in (7), which enable this rare type due to their nature, namely "momentous events" (Comrie, 1985, p. 37).

(6) I promise that I will bring your book.

(7) I name this statue a weirdo.

By nature, these eventualities like *promise* and *name* need to be uttered in order to be realized. Someone who promises for something actualizes the event as soon as one utters it. Similarly, one needs to utter the verb in order to be able to give

something a name. Comrie (1985) also adds reporting a part of an ongoing event to the momentous events. An example of this situation can be when a commentator reports a race. Crossing the finishing line is a subpart of a race in which John runs. The commentator can utter the sentence at the time when the subject acts or experiences the event as in (8).

(8) John crosses the finishing line.

The most prominent characteristic of the present tense is that the event actually takes longer than the utterance time. The event "John's running" in (4) requires more time than the time in which the speaker utters the event, hence the event time encompasses the utterance time.[3]

The cases where ET precedes UT yields past tense. The event can be instantaneous and located at a point as in (9) or it can be located at several points in the past as in habitual constructions[4] in the past, as in (10).

(9) John saw Marry at two o'clock.

(10) Deniz lived in Istanbul from 2000 to 2003.

Past tense only locates the event or the situation in the past without indicating the relationship of the event or the situation with the present. Nonetheless, Comrie (1985) follows Grice's maxim of relationship and highlights the fact that being in the past means that the event is not related to the present. The events in the

[3] For other usages of the present tense, refer to Comrie (1985) and Enmutlu, (1984) among the others.

[4] Languages may choose different strategies to encode the habituality in the past. For instance, English encodes the habuality which does not hold in the present via "used to".

(i) Deniz used to live in Istanbul from 2000 to 2003.

In contrast, languages like Turkish encode this notion via a combination of different morphemes like the aorist and -DI in (ii) or -Iyor, imperfective marker, and -DI, past tense marker, in (iii).

(ii) Deniz İstanbul'da yaş-ar-dı.
Deniz İstanbul-loc. live-aorist-DI
"Deniz used to live in Istanbul."

(iii) Deniz İstanbul'da yaş-ıyor-du.
Deniz İstanbul-loc. live-Iyor-DI.
"Deniz used to live in Istanbul."

Comrie highlights that the grammaticalization of this notion is rare across languages.

past can be completed or terminated as in sentence (11) but it is hardly possible to comment on that unless the grammatical structure and lexical semantics give information about the completion or termination. In terms of termination and completion, sentence (11) is ambiguous. In other words, the speaker may report a terminated event in the past. Another option can be that the speaker may choose to represent a completed event as unbounded via imperfective verb form. The event in sentence (11) can have been completed or terminated; however, it is expressed as an imperfective event. Thus, the addressee cannot know whether the event is terminated or completed unless the speaker says that ".. and Zeynep ate up her dinner" or "Zeynep needed to answer a call and could not finish her dinner".

(11) Zeynep was eating her dinner.

The third option in the relationship between the Utterance Time and the Event Time is when ET follows UT. This relation gives future tense. The events in the future, unlike the past, do not have a realization, hence, the speaker cannot go beyond having only the prediction about the future when the phenomenon is considered conceptually. In this respect, the past is more definite than the future. This fact has become a debate in the literature and the future is viewed as a category of mood or modality rather than a category of tense (Binnick, 1991; Comrie, 1985; Dahl, 2000; Erguvanlı Taylan, 2001; Higginbotham, 2009 and Yavaş, 1982). The discussion is crucial to understanding how languages grammaticalize the notion of future as a tense or a modal; however, this discussion is beyond the scope of this thesis. Putting aside these discussions, future is assumed as a tense in order to be clear and consistent in this thesis.[5]

[5] For further discussion on future, please refer to Yavaş (1982), Comrie (1985), Binnick (1991), Dahl (2000), Erguvanlı Taylan (2001) and Higginbotham (2009).

When the tenselessness notion is considered, being tenseless is mostly defined as the fact that the language does not grammaticalize time on the verb (Binnick, 1991; Comrie, 1985, Lyons, 1977). More clearly, the verbal stem does not contain a tense affix. However, as mentioned before, it is not possible to represent events and situations without referring to the time of occurrence. Thus, the scholars have defined the notion "tenseless" in a variety of ways. According to Comrie (1985), a tenseless language does not have any tense inflection on the verb for any absolute tense (p. 50-51). Likewise, for Lyons (1977) if a particular language is tenseless none of the sentences in this language bears tense inflection even though they may have deictic adverbials or particles (p. 679). He views languages which mark tense in some sentences but not in others as "tensed languages". On the other hand, Binnick (1991) considers a "tenseless" language not having an agreement inflection on the verbs just purely functioning as a tense marker.

Moreover, he includes Semitic languages, creoles, Chinese and sign languages under the heading "tenseless languages" and mentions that creole languages may have a preverbal particle for past meaning as opposed to markers for aspectual markers such as durativity or progressivity and for modal particles. Another example is that sign languages (ASL and BSL) have signs for aspectual notions, perfective or completive and they also carry the meaning of pastness or anteriority. In these terms, Binnick's (1991) definition of tenseless languages seems to differ from Lyons' (1977) definition which expects that a tenseless language would not mark any tense on the verb. However, when the cases of Creole languages are considered, Binnick states that these markers which are assumed to denote past meaning also denote perfectivity or definiteness in the past. Thus, it is not so easy to decide the main function of these particles or signs.

As mentioned before, it is nearly impossible to conceptualize events and situations without anchoring them to a time span or point. Although the languages like creoles, sign languages or Chinese are viewed as tenseless, they convey time meaning in the language. As discussed above, these languages may have particles or words such as adverbs which express time information in addition to aspectual information or realis and irrealis distinction. Comrie (1985) also points out that time information can be given either lexically by adverbials like *tomorrow* and *last week* or "deduced from the context in conjuction with knowledge of the world" (p 51).

2.2 Aspect

Aspect is defined as a grammatical notion which gives information about the internal temporal structure of events or situations (Comrie, 1976; Smith, 1997; Rothstein, 2004; Vendler, 1967; Verkuyl, 1993 among others). The difference between the sentences (13) and (14) is aspectual information although both sentences have past tense inflection. (13) presents the event *running* as an incomplete or ongoing event while (14) presents the same event with its beginning and ending points, namely, as a whole. This kind of aspectual information is referred to as grammatical aspect (Comrie, 1976). The main distinction in the aspectual categories is between grammatical and lexical aspect (Rothstein, 2004) which are also respectively referred to as viewpoint (Smith, 1997) and situation (Smith, 1997) or Aktionsart (Binnick, 1991; Lyons, 1977). I will use the terms viewpoint and situation aspect in this thesis.

(12) Can was running.

(13) Can ran.

Viewpoint aspect as in (12) presents events either as a whole, as in (13), or within events. The first type of category is called perfective while the second one is

called imperfective. Detailed discussions for these classifications will be given in the section 2.2.2.

Situation aspect distinguishes among event types based on features such as telicity, having stages, cumulativity or quantization. Vendler (1967) proposes a five-way distinction in situation aspect: states, activities, accomplishments, achievements, and semelfactives. These classifications will be presented in section 2.2.1. The following diagram summarizes the main classification and sub-classifications under the category Aspect.

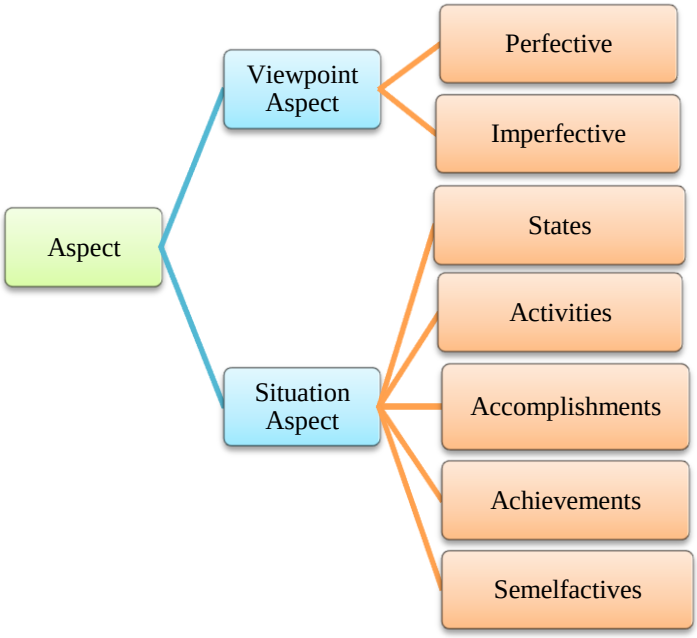


Figure 1. The main classification and sub-classifications of aspect

The following subsection will present the definition of situation aspect and its subcategories. The features which the subcategorization is based on will also be presented. The subsection that follows will provide the information about viewpoint aspect and its subcategories. It will furthermore present how it interacts with situation aspect.

2.2.1 Situation Aspect

Situation aspect concerns with how events or situations are lexicalized in the language through verbs or verb phrases. Events and situations can have many different realizations in the world and every language can choose which feature or part of the event or the situation to reflect in the grammar. The classification in situation aspect is based on the combinations of different features. As for these features, there has been a number of proposals in the literature (Rothstein, 2004; Smith, 1997; Vendler, 1967; Verkuyl, 1993), such as telicity, having internal stages, cumulativity and quantization. The literature embodies a different approach to these notions, that is, some scholars (Comrie, 1977; Smith, 1997; Rothstein, 2004 among others) attribute these features to the verbs and the lexicon, while others (Dowty, 1989 and Higginbotham, 2009 among others) attribute them to events and syntax. Firstly, I present the lexicalist view in this section and discuss the syntactic approach in Section 2.2.3.

Telicity, which is one of the defining features of situation aspect categories, is the property that an event inherently has an endpoint such as *reading a book* or *drawing a circle*. Thus, these events which have an internal endpoint denote a change of state such as from non-existence of a circle to existence of a circle. On the other hand, some do not inherently have an endpoint and can continue without an interruption such as *loving* or *running*. Our world knowledge tells us that an event like *running* can be terminated due to fatigue in the agent of the event. However, in the case of an event *drawing a circle,* it will be completed whenever a circle is produced. Conversely, *running* itself does not put a boundary on the event. When it is imagined without the physical constraints, it can, in principle, last forever. Thus, *drawing a circle* is a telic verb and *run* is an atelic verb. Other examples of telic

verbs are *understand, die, remember, read a book, paint a picture,* and *build a house* and examples of atelic verbs are *love, know, walk, run, swing*. In addition to being an inherent feature, telicity can also be manipulated by the viewpoint aspect as long as the lexical aspect permits it and the situation is discussed in detail in this subsection. In addition to viewpoint aspect, it also changes according to the internal and external arguments of the verb[6]. This crucial discussion will be readdressed in Section 2.2.3.

Another related feature for the classification is whether the events or the situations have stages and these stages are culminated or quantized. What is meant by having stages is that time is a necessity for the events or the situations to be realized. For instance, *jump* is an instantaneous event which takes a minute to occur while *run* or *paint a picture* takes a longer time to occur. During this time, some events or situations like *paint a picture* are built upon one stage while reaching their end points, that is quantization. On the other hand, some events or situations like *run* preserve their form while the stages are built on one another. This is called cumulativity (Rothstein, 2004).

Cumulativity and quantization lead to a difference in telicity. If a predicate is cumulative its sub-events and their sum are identical. If we subdivide the event of *running* the sub-events can also be called, *running*. However, if we subdivide the event of *painting a picture* into *sketching, coloring and shading* the sub-events

[6] The literature has different camps for the classification of the verbs. While some scholars like Vendler (1976) propose that the classification exists in the lexicon, some scholars like Verkuyl (1993) oppose the idea by pointing out the different denotations which are produced with the combinations of the verb and its arguments. For instance:

(i) Mary drew a circle. (telic)
(ii) Mary drew circles. (atelic)

Verkuyl (1993) argues that the quantity of the internal argument in the sentences (i) and (ii) affects the telicity of the verbal domain. The plural internal argument in (ii) presents the event as a whole and drawing each circle as a subpart of this event. On the contrary, the event in (i) is drawing only one circle and it ceases when the circle is completed. In contrast, Verkuly (1993) claims that the classes are just the by-products of the combinations of the verb and its arguments. However, every option is not possible for every verb and the combinations. Thus, this shows that the combinations are not totally free from the semantic features of the verbs.

cannot be called as *painting a picture*. In other words, *painting a picture* has distinct sub-events in its denotation and the sub-events and their sum are not identical. Stages in quantization, unlike cumulativity, are successive and the following stage builds upon to the previous stage. Rothstein (2004) argues that homogeneity of subevents is a crucial criterion for quantization. For instance; *eating three apples* can be subdivided into *eating one apple* for each instance, hence each sub-event is nearly identical to each other, therefore *eating three apples* can be analyzed as quantized. On the other hand, the second example *painting a picture* is not considered to be quantized in Rothstein (2004). The reason for this is that the sub-events of *painting a picture*, unlike *eating three apples*, are not homogenous.

When events and situations are considered according to whether they bear these features or not, the-five-way distinction occurs as states, activities, accomplishments, achievements, and semelfactives. Table 1 gives these classes and the features presented above.

Table 1. The Lexical Semantic Classes and Features

Classes/Features	telic	having stages	cumulative	quantized
State	-	-	-	-
Activity	-	+	+	-
Accomplishment	+	+	+[7]	+
Achivement	+	-	-	+
Semelfactive	-	+	-	-

[7] As seen in the discussion above, accomplishments can be considered as either cumulative as in the example (i) or quantized as in (ii). Rothstein (2004) argues that a subevent of 'eating' does not equal to a subevent of 'painting' as discussed above. However, they would be the same if the example was 'Mary ate an apple.' At that point, the crucial question is whether the proposition in (i) denotes a signle event or represents three different events as a whole. Yet, I leave this discussion here.

(i) Mary ate three apples.

(ii) Mary painted a picture.

The following subsections will present these classed based on the discussions on these features.

2.2.1.1 States

The term "state" refers to different notions in the literature. It can refer to stative expressions (14), adjectives (15) or to states denoted by the verb phrase (16). In sentence (14), the stative reading is derived by the structure, in other words, the imperfective form of an activity verb presents the subject as being in the writing process. The subject in this sentence is the agent of the event while the subjects in sentences (15) and (16) are the experiencers of the states rather than having volition on the state. These two sentences only differ in how these states are worded. That is, the sentence (15) conveys the meaning via the adjective "lover of" while the sentence (16) does this via a stative verb "love".

(14) John is writing his thesis.

(15) John is Mary's lover.

(16) John loves Mary.

As described above, the three sentences can be interpreted as "John is in the state of x" which is denoted by the verb phrase of the sentence. All the states are denoted by different kinds of structures; verbal predicates and adjectival predicates. Furthermore, the lexical category of the verb in the first sentence is an activity rather than a state. The main focus of this subsection is the verbs which denote states such as the one in (16).

The external arguments of states, as the name implies, are the experiencers of these eventualities, not the agents. Thus, the state for the subject is true through all the time intervals. To exemplify:

(17) John knows French.

In (17), the subject of the sentence John has no control or volition to change his state of knowing French. This situation can inevitably be challenged by the world knowledge. John may have aphasia and lose his language ability. However, it is not the denotation of the sentence (17), the sentence denotes John's present state. Furthermore, the state is true for all the instances in the denotation; its truth condition does not change through time. Therefore, the states do not have stages, they are [-stages, -telic].[8]

Some classic tests regarding the features mentioned above can be applied in order to understand the lexical features of the verbs. Rothstein (2004) argues that some contexts make state verbs compatible with these structures, even though the verbs are expected to be incompatible. These contexts may focus on the pre-state or into-state period (p. 16-17). Bearing Rothstein (2004) and Rothmayr's (2009) concerns and arguments in mind, I will briefly summarize these tests. First of all, as states do not have internal stages, they are expected to be incompatible with the progressive.

(18) *Lily is owning a house.

Sentence (18) could not refer to a state which Lily is always in. Referring back to Rothstein (2004), it can be compatible with a context where Lily is planning to buy a house and makes arrangements for the process. Then, the sentence has a focus on the pre-state of Lily's owning a house. Another crucial test is that the state verbs inflected with present simple tense give a non-frequentive or a non-habitual reading, while the occurrence of present simple with other verbal categories yields the habitual or frequentative reading.

[8] Although the verbs categorized as states are thought to behave in the same manner, they can show varieties and yield different results with the tests mentioned above. See Rothmayr (2009) for a classification of stative verbs.

(19) Lily owns a house.

(20) Lily paints a picture.

(21) Lily quickly recognizes a difference.

(22) Lily walks for an hour every day.

In contrast with sentence (19), sentences (20), (21) and (22) refer to Lily's habits or occupations rather than one instance of the eventualities. In the terms of Higginbotham (2009), they are generic eventualities and present tense functions like a universal quantifier. In other words, if we assume that the span of these eventualities is Lily's life and take an interval from this span these eventualities occur throughout these intervals. Furthermore, Higginbotham (2009) adds that the generic events make E^{9} visible. It can become visible with existential closure in other circumstances. Thus, for the denotations of the above sentences:

(23) For all time spans, there is an event which Lily paints a picture, recognizes a difference or walks for an hour.

As mentioned before, the experiencer of the state verbs does not have a volition on the state, hence, this inevitably causes the incompatibility between state verbs and imperative structures. In the same sense, states are also ungrammatical as complements of verbs or adverbs which denote agentivity.

(24) *Know Turkish Sign Language by next month.

(25) *Deniz persuaded Can to love shrimps.

(26) *Toprak deliberately resembled his mother. (in the physical sense)

In a particular context, all ungrammatical sentences (24)-(26) can be acceptable and denote the meanings which are expected to be incompatible as Rothstein (2004) and Rothmayr (2009) discuss in detail. However, the initial

[9] Higginbotham (2009) following Davidson's proposal assumes that an event can be represented in an argument position, the E-position. The E-position can be associated with every head which are predicative, V(erb), N(oun), A(djective) or P(reposition) (p. 19).

expectation from state verbs is to give the above results. This is because states naturally are the grammaticalized or lexicalized version of the [-telic, -stage] eventualities.

2.2.1.2 Activities

Activities such as *running*, *walking* or *speaking*, similar to states, are atelic. However, the two types differ from each other in that according to Rothstein (2004) state verbs do not denote events with stages whereas activity verbs do. Having stages requires agentivity. The subject of a state verb cannot operate on an eventuality, hence cannot be the agent. The subject of an activity verb, on the other hand, is an agent.

Another contrast between states and activities is that activities are down to minimal events while the states are down to instants. When a minimal section of the event "loving" is examined, the event is still loving in that instant. In contrast, a similar section in the event of running may not be running but taking a step. In fact, running consists of a set of other events; such as taking steps. Thus, Rothstein (2004) names this case "a minimal event" which is bigger than taking a step and corresponds to the minimal form of running (p. 20). Consequently, states and activities differ from each other in terms of what they are down to; instants or minimal events.

A defining property of activity verbs is what is called the imperfective paradox. It has been observed that the progressive form of an activity verb entails a completed or terminated subevent, expressed in the present perfect in English. For example, the sentence "Cem is walking" entails the subevent "Cem has walked" In formal terms, activities denote a perfective minimal event that belongs to an imperfective event, which is not the case for other lexical aspectual categories. For

instance, the sentence "Cem is drawing a circle" which has an accomplishment verb does not entail that Cem has drawn a circle, since the sentence "Cem has drawn a circle" is not true until Cem completes the act of drawing.

Another test for activities may be compatibility with the progressive and adverbial *for x (time)* because activities have stages. To exemplify, "Ege has been running for half an hour" is grammatical while "Ege is running in a minute" is ungrammatical. It can be grammatical only in a context such as Ege is an athlete and has trained for an important race. While talking about his competence, one can say that he is running a mile in a minute. Another reason for this compatibility is telicity. Activities like states can neither end nor be completed. The event can theoretically hold forever unless fatigue or worldly effects intervene in the event. Cem terminates the running because he is either tired or has another duty, but the event itself does not denote an endpoint. Consequently, Smith (1997) points out that the notion of completion is irrelevant to activities by stating that activities can only be terminated or stopped , which will be a crucial test in the analysis of aspectual markers in TİD in this thesis.

2.2.1.3 Accomplishments

Smith (1997) defines accomplishments as the lexical forms of a process with an endpoint or outcome. Another way of putting this is that an accomplishment is an activity which moves toward an endpoint (Rothstein, 2004). The process introduces the notion "stages" while the endpoint or the outcome highlights the fact that accomplishments are telic events. Sentences (27) and (28) have classic examples of accomplishments. Both of them present events which have stages and whose products are a picture and a house, respectively.

(27) Cemre painted a picture.

(28) Can built a house.

Smith (1997) points out that the stages in an accomplishment verb, unlike an activity verb, are successive and the following stage builds upon the previous stage, which is quantization. While one stage of an activity verb is identical to another stage which corresponds to 'minimal event', an accomplishment verb builds upon stages to reach the outcome and one subevent is not identical to either another one or the whole event. Another way to express this difference can be saying that activity events are homogeneous while accomplishment events are not. A part of an accomplishment event cannot be part of a bigger singular event of the same kind without changing its internal structure. To illustrate, a subevent of *building a house*, for instance, *scaffolding*, cannot be equal to the whole *building a house* event. However, a subevent of *running* event can be identical to the whole *running* event as discussed in the previous subsection.

Building upon the previous discussion, the imperfective paradox or entailment test does not hold for accomplishment verbs. As seen in the following examples, the imperfective meaning of *reading the book* does not entail the perfective meaning *have read the book* while the progressive form of *running* entails *have run*. The reason for this difference is that accomplishment events move toward a finishing point or culmination while activity events or situations are atelic and the stages in an activity event do not depend on another stage.

(29) a. Zeynep is reading the book DOES NOT ENTAIL Zeynep has read the book.

b. Zeynep is running ENTAILS Zeynep has run.

Smith (1997) highlights the fact that both activities and accomplishments have stages or processes, yet the main difference is that accomplishments, unlike activities, have an end state. An accomplishment verb can be either completed or terminated without reaching its endpoint. She states that the process has to occur in order to reach the endpoint. To illustrate, in a sentence like "Zeynep read the book", she has to go through the reading process and then the event reaches its endpoint. Smith (1997) points out that the entailment relation in (29) is the opposite for accomplishment verbs. In other words, "Zeynep has read the book" entails that "Zeynep was reading the book". She calls this relation "non-detachability" since the process has to take place in order to culminate to the endpoint.

Smith (1997) argues that the change of state of an accomplishment takes various forms by explaining that the new state may effect the object as well as the subject. She classifies telic events according to the type of result they bring about (p. 27, example (16)):

(30) Major types of results:

Affected object: [bend an iron bar], [wrinkle a dress], [break a pot]

Constructed object: [build a house], [write a letter]

Consumed object: [destroy a house], [drink a glass of wine]

Affected experiencer: [amuse Mary]

Path-Goal: [walk to the lake], [work from 2 to 3]

She identifies a difference between the first example; *walk to the lake* and the second example; *work from 2 to 3* of Path-Goal. She calls events like the second example bounded but not telic events. Even though they have specific and finite endpoints (bounded), they do not encode a change of state, hence, they are not telic. More clearly, when somebody walks or runs a certain distance, she arrives at a new

location; this is a change of state. It is not the case when somebody works for 3 hours. When the issue is space it becomes possible to talk about resulting states but it is not true for time even if the events are bounded ones.

2.2.1.4 Achievements

Achievements are also telic events which are mostly referred to as instantaneous events. These instantaneous events denote a change of state, that is, from a non-phi situation to a phi situation. The examples below (31a and b) express a case in which Can is going through from non-recognizing the spot to recognizing the spot or from non-reaching the top to reaching the top.

(31) a. Can recognized the spot.

b. Can reached the top.

Achievements, unlike states and activities, consist of a single stage which denotes a change of state, in other words, telicity. An achievement sentence is true only for the moment of the event. For instance; if "Can recognized the spot" is true for time t, it does not follow that "Can was recognizing the spot" is true at that time. Actually, "Can was recognizing the spot" can be true for some time but that time may be before time t.

Although both Smith (1997) and Rothstein (2004) state that achievements are not associated with any preceding task or activity, Smith highlights the fact that many achievements may allow or require preliminary stages such as win a race or reach the top while some achievements do not have preliminaries such as recognize the spot or find the watch. The second category may occur with preliminary stages; for example, somebody may need to search for his watch before finding it. On the other hand, he may also find the watch without the searching stages. Although we

can infer their necessity or possibility of occurrence through our world knowledge, the crucial point is that preliminaries are conceptually detached from the events in achievements whereas they are non-detached and part of the whole event in accomplishments. Preliminaries are not in the denotations of achievements, unlike accomplishments.

2.2.1.5 Semelfactives

Another category which has instantaneous events is semelfactives. Examples of semelfactives are *knocking, coughing* or *jumping.* They are also single-stage events but they differ from achievements in that they do not denote a change of state and they are atelic. Similar to achievements, semelfactive events are also bounded events. Semelfactive events are bounded because they are "the simplest type of event which consists only in the occurrence" (Smith, p. 29) and they are atelic because, unlike achievements, they occur with no result or outcome. If we look at the examples of semelfactive events such as *cough, blink, knock or hiccup* all of them are instantaneous; in other words, they happen when they occur. On the other hand, when somebody coughs, she does not experience a change of state or end up with an outcome, which is the expected result for achievements or accomplishments like the change of mental status in *understand* or the outcome of a painting in *paint.* This situation shows that semelfactive events are atelic although they are bounded.

Smith (1997) shows that semelfactives are compatible with the progressive and the adverbials which denote a period of time. For instance; the sentence "Mary has been coughing for five minutes" occurs with progressive and an adverbial which denotes a period of time. This situation is expected for atelic events while it is not for instantaneous events. Then, the question arises: What feature is more prominent in

semelfactives? Smith points out the fact that "Mary has been coughing for five minutes" is different from the sentence "Mary has been running for half an hour" While the second sentence denotes a single event, the first one denotes repetitive events that is *coughing* contains many single *cough* events. Smith (1997) calls them as multiple-event activities because they are said to behave like activities.

Rothstein (2004) argues that assuming the existence of the category "semelfactives" creates a problem for a theory based on the combinations of two features; telicity and stages. The combinations of two features give four categories not five. That is, the combination of the features does not give the class of semelfactive. If another feature is added, then the combinations will give eight categories but the additional three classes which the combination predicts do not have a realization in natural languages. Thus, Rothstein (2004) proposes that semelfactive events should be considered activities, and not a distinct category. She assumes that the single event in semelfactives; *cough* or *knock* equals to the minimal event in activities so the event "coughing" is not different from the event "running". To summarize, she assumes that semelfactives also belong to the class of activities.

Although Smith (1997) and Rothstein (2004) are right that semelfactives and activities are atelic and compatible with progressive, Rothstein misses the point that activities comprise the minimal event; however, this is not the case for semelfactives. To illustrate, the minimal event of the event *walking* is *taking a step*. The event *walking* is bigger than *taking a step*. The combinations of several events *taking a step* creates a new event *walking*. On the other hand, the occurrence of several events *cough* does not give a new event different than the event *coughing*. Rothstein (2004) also points out that "Mary is knocking on the door" entails that "Mary has knocked on the door". This is the imperfective paradox which is a test for activities as

mentioned before. However, the second sentence is ambiguous. The sentence can denote a single event or several *knocking* events which have occurred in the past, which is not the case for activities.

Another argument against the assumption that the single event in semelfactives equals the minimal event in activities is the following: if that were the case, we would expect the imperfective paradox to give the minimal event in activities like the single event in semelfactives. For instance; a semelfactive event "Mary has knocked on the door" is ambiguous that is Mary may have knocked on the door just once or the knocking event may contain several repetitive events. One of the entailments of "Mary has knocked on the door" is the single event "Mary has knocked on the door once". In a sense, it may entail its single event. If the single event was equal to a minimal event, the expectation would be that the entailment relation would give a single event in semelfactives while it would give a minimal event in activities. However, "Mary is running" does not entail "Mary has taken a step" which is the minimal event of the *running* activity. Based on these reasons, this thesis assumes that semelfactives are a distinct lexical semantic category.

Before giving the summary, I present the main distinction which will be crucial in the discussion of the function of the nonmanual marker 'bn' in TİD. One can make a main distinction above these classifications as states in Section 2.1.1.1 and events corresponding to activities, accomplishments, achievements and semalfactives. Smith (1997) presents the difference between states and events. She puts forward that events are discrete and bounded entities while states are cumulative and unbounded. As discussed in the previous subsections, events can be intrinsically bounded like accomplishments and achievements or extrinsically bounded as seen in activities. In other words, activities can be temporally bounded and have external

bounds. In contrast to events, states are cumulative and unbounded. Smith (1997) states that they have a uniform structure and all sentences with the imperfective viewpoint belong to the class of stative sentences. Additionally, another difference is the necessity of energia, that is, events always require an input of energy while states continue over an undifferentiated period unless something changes this situation.

This subsection has given the descriptions of lexical aspectual categories which the verbs or verb phrases denote, the discussions for these categories and the possible tests for them. The thesis assumes that there exists a five-way categorization among the events or situations, namely, states, activities, accomplishments, achievements and semelfactives. Some of the tests and these categories will be referred to in order to understand the semantic features of the perfective signs in TİD. The following subsection will present a different categorization in aspect; namely, viewpoint aspect which focuses on how much the grammar presents the temporal structure of the events in the structure of a language.

2.2.2 Viewpoint Aspect

Smith (1997) makes a connection between aspectual viewpoints and the lens of a camera which makes objects visible to the receiver (p. 61). As the lens of a camera makes the objects as much visible as a photographer wants, a situation can be presented based on how much a speaker wants to convey its temporal information. Aspectual viewpoints convey semantic information; on the other hand, pragmatic interpretation has an essential contribution to interpret them. As a consequence, at the pragmatic levels, semantic meaning interacts with contrastive value, context, and rhetorical emphasis.

Other notion at the junction of aspectual information and pragmatics is being open or closed informationally. Smith (1997) defines openness as being able to see the internal structure of the event. She links it with imperfectivity. Being closed informationally means that the events are presented with both endpoints and complete. This corresponds to perfectivity. She highlights that the distinction between open and closed is due to the conceptual and narrative time rather than real time. For instance, "Mary was walking to school" is an informationally open sentence because the addressee does not know whether the event has reached its endpoint. The speaker can continue the sentence in either way. She can say "She arrived five minutes before the exam" and conveys that the event is completed. In addition, she can continue as "She got a call and turned back the house" and conveys that the event is terminated. However, the cancellation of the occurred event is not possible as seen in (32). This discussion with different viewpoint aspects can be analyzed in detail, however I will not go further for time and space constraints.

(32) *Mary walked to the school but she did not get there.

Meanings which aspectual viewpoints convey are expressed by linguistic forms and the meaning cannot be canceled. Smith (1997) points out the fact that aspectual viewpoints have consistent meanings for a language although languages differ in the organization of their viewpoint systems. Aspectual viewpoints can be categorized as imperfective and perfective (Comrie, 1976) while another categorization is three-way; imperfective, perfective, and neutral (Smith, 1997). Briefly, perfective makes a situation visible in its entirety including the endpoints. In contrast, imperfective focuses on an interval that excludes endpoints. Neutral is between perfective and imperfective and includes the initial endpoint and, at least, one stage. In this thesis, I assume a two-way categorization, perfective and

imperfective. The following subsections describe these categories in more detail to identify the inflectional forms expressing these aspectual categories.

2.2.2.1 Perfective

Comrie (1976) and Smith (1997) define perfective as a viewpoint aspect representing a situation as a whole; with both of their endpoints. Comrie (1976) defends the view that perfective involves the lack of explicit reference to the internal temporal information (p. 21). The definition that perfective focuses on a situation as a whole suggests that it is compatible with the situation types which have endpoints namely activities, accomplishments, semelfactives, and achievements. The sentences in (33) have an example for each category which conveys completed events (33a,b) and terminated events (33c,d). The meaning of completion or termination is derived via the interaction between perfective and the situation aspect. As seen in the following examples, perfective with atelic events expresses termination while perfective with telic events express completion.

(33) a. Can wrote a poem. (telic event/verb, completion)

b. Can arrived in Ankara. (telic event/verb, completion)

c. Can ran in the park. (atelic event/verb, termination)

d. Can hiccupped. (atelic event/verb, termination)

The expected result between perfective and statives is incompatibility as statives do not have endpoints. However, both scholars highlight the fact that languages show difference in the compatibility with statives. Smith (1997) summarizes the different behavior of languages in three categories. The first type of language is the languages which have verbal aspectual inflection that expresses changes into and out of a state. Comrie (1976) calls the aspectual category which

expresses a change into a new state as "ingressive". The second type is the languages which present open stative situations by perfective statives. The last one is the languages in which the perfective does not apply to statives. The examples for these kinds are respectively French, English, and Russian. The examples for the first two languages are taken from Smith (1997, p. 70). For sentence (34), the interpretation is closed and it contradicts when it occurs in open contexts as seen in (34b). On the other hand, sentence (35) has both closed and open interpretation and it can occur in both open and closed contexts as in (35a) and (35b). (35) shows that English does not fit into the classification given above and both (open and closed) interpretations are possible.

(34) a. Marie a vecu a Paris.

"Marie lived in Paris."

b. *Marie a vecu a Paris et elle y vit encore.

"Marie lived in Paris and she still lives there."

(35) Jennifer knew Turkish.

a. ...but she has forgotten it all. (closed)

b. ...and she still knows it. (open)

Smith (1997) also discusses whether the interpretation which is conveyed by a sentence is due to the meaning which is given by a linguistic form or whether it includes pragmatic inference. She highlights that the meaning is expected to be consistent regardless of the contexts in which the meaning can vary. The possible test for this can be putting sentences in the contexts which are not compatible with closed meanings as in the examples (36a) and (36b). In both examples, the second sentences present the situations as an open process but they contradict the semantic information which is conveyed by the first sentences. The readings do not change with respect to

the contexts which express open or closed readings and the conjunctions are contradictory.

(36) a. *Aslı walked in the park and she is still walking.

b. *Aslı drew a picture but she left it unfinished.

Although languages apply various strategies in their grammar in order to convey a perfective event, the core meaning of perfective is presenting a situation or an event as a whole. Perfective sentences are informationally closed and their entailments cannot be cancelled. Thus, possible tests to identify perfective aspect are compatibility with situation aspect and different contexts which have open or closed interpretations.

2.2.2.2 Imperfective

Imperfective presents the parts of a situation with no information about its endpoints. Imperfective situations are open informationally. The same tests mentioned for perfective situations can be applied to imperfective situations such as testing with open contexts and conjunctions. Although Comrie (1976)[10] subcategorizes imperfective in detail both Comrie (1976) and Smith (1997) mainly discuss what the difference is between imperfective and progressive.

Both scholars point out the fact that progressive is mostly realized via linguistic forms in languages like -ing in English or -(I)yor in Turkish and imperfective has a wider range than progressive in terms of compatibility with different situation aspect classes. Smith (1997) emphasizes that imperfective appears with all situation types while progressive does not appear with statives. As seen in

[10] He divides imperfective into habitual and continuous and then continuous into non-progressive and progressive. I do not go into detail for these categories in this thesis.

the following example which is taken from Smith (1997, p. 73), French Imparfait is compatible with stative (37a), activity (37b), and accomplishment verbs (37c).

(37) a. La mer etait calme. (Stative)

The sea was[Impf.] calm

b. L'enfant pleurait. (Activity)

The child was crying[Impf.]

c. Ils batissaient une cabine. (Accomplishment)

They were building[Impf.] a cabin.

Although the first expectation from imperfective with statives is ungrammaticality based on the fact that statives do not have stages, imperfective presents the situations as open ones and having stages means to be dynamic, active and involve change, all of which are related to progressive. This explains why progressive and statives are ungrammatical in the following example (38c). Knowing a language does not have the connotations of dynamism and change. The experiencer of the sentence (38c) cannot change or control her state of knowing language to non-knowing language.

(38) a. Ali was dancing. (Activity)

b. Can was walking to the park. (Accomplishment)

c. *Zeynep was knowing French. (Stative)

As for situation aspect, it is also unexpected for imperfective to appear with achievements and semelfactives when we consider that they do not have stages and imperfective focuses on the internal stages of a situation. However, imperfective and progressive occur with both situation aspects. Smith (1997) calls this marked imperfective viewpoints. This is because imperfective with achievement situations presents its preliminary stages. Sentence (39) concentrates on times before time T

which the event *realize* takes place. Compatibility with semelfactives cannot be due to the focus on the preliminary stages as they do not have these stages as discussed in section 2.2.1.5. Sentence (40) has a semelfactive event with imperfective. Actually, the event in the sentence is the representation of more than one bouncing event, which Comrie (1976) calls as iterativity (p. 27).

(39) Ozan was realizing the truth.

(40) The ball is bouncing.

To sum up, imperfective with different situation aspects can yield different meanings like focusing on pre-stages or iterative events. Languages also have various linguistic realizations and subcategorizations for which the reader may refer to Comrie (1976) for more details. However, the core meaning of imperfective is being open informationally. It can be tested within various contexts and the meaning conveyed with imperfective aspect cannot be cancelled as pointed for perfective aspect in the previous section.

2.2.3 Representation of event structure in syntax

It has been a research question whether the functions which aspectual markers express belong to their lexical features or emerge by the interaction of the verb with its arguments, in a sense, in syntax. These representations have different presuppositions, that is, aspectual notions can be related to only verbs, events, or entire propositions. This discussion results from either the interaction of viewpoint aspect with situation aspect and their different reflections on the morphology or syntax of the languages, or different sentences as seen in (42). Sentence (42a) has the verb eat without its internal argument while (42b) has the same verb with an

indefinite internal argument. On the other hand, the verb has an internal argument with a universal quantifier in (42c). It is modified with a time adverbial in (42d).

(42) a. John is eating.

b. John is eating a sandwich.

c. John is eating every sandwich.

d. John is eating a sandwich in an hour.

Comrie (1977) and Smith (1997) would analyze these sentences by attributing them different aspectual categories. To illustrate, (42a) and (42c) would be considered as atelic and having activity verbs while (42b) and (42d) would be considered as telic and accomplishment verbs. However, this raises the question whether the lexicon has two distinct verbs *eat* with different features or it has only one *eat* and it changes through the interaction with its internal argument, its features, or time adverbials. On the other hand, some scholars (Dowty, 1989; Higginbotham, 1985; Tenny, 2000 among others) would suggest that *eat* is a consumption verb and denotes a change of state, thus, by nature it denotes a telic event containing a process. Even though the internal argument is dropped in (42a), the meaning of the verb is not different from (42b) when we consider that aspectual information is denoted by event.

English does not make a morphological distinction to express the aspectual difference between (42b) and (42c), however, I will show in section 5.2.2 that TİD makes such a distinction. (42b) has a single eating event while (42c) quantifies the eating event over each internal argument. Tenny (2000) decomposes events and suggests that events may have a complex structure and may be composed of a core or inner event and an outer event. She argues that a sentence like the one in (43) has a

complex event: The core event is 'The gravy is thin' and the outer event is 'The cook acted on the thinning event'.

(43) The cook thinned the gravy.

Moreover, she argues that the quantification takes scope over only the outer event, not over the core event. If we return to the discussion on (42b) and (42c), we will see in section 5.4 that TİD makes a distinction between these two sentences, based on quantification and this distinction plays a crucial role in showing how the manual sign BİT 'finish' and the nonmanual sign 'bn' differ from each other. See Ramchand (2010) and Travis (2010) for a detailed discussion of the structure of inner aspect.

Another crucial point which is widely accepted in the literature is that change of state verbs include a core event that denotes a final state and the internal argument becomes that state. Incremental theme verbs, creation verbs, verbs of motion to a goal and some achievement verbs are classified under the change of state verbs category. Tenny (2000) presents examples for these classifications as follows (p. 303):

(44) change of state verbs:*melt, die, close the door, cure the patient, fill the glass*

incremental theme verbs: *eat a sandwich, build a house*

verbs of motion to a goal: *run a mile, run to the drugstore*

She proposes three verb classes based on their interactions with adverbs and furthermore, semantic zones of composition by regrouping Cinque's (1997) universal hierarchy. The regrouping of adverbs is given in (47). The verb categories in (44) and (45) corresponds to her class of 'verbs with core events and a measure or path' and (46) have verbs with core events but no measure or path and the events without core evets (Tenny, 2000, p. 303).

(45) verbs with core events but no measure or path:

verbs of putting: *put the book on the table, set the bowl on the shelf*

(46)verbs without core events:

verbs of contact: *kick, touch, hit*

stative pscyh verbs: *love, know*

perpection verbs: *hear, see*

(47) Tenny's (2000) regrouping the adverb classes (p. 318):

point of view: *frankly, fortunately, allegedly, probably*

deictic time (temporal deixis): *once, then*

truth value: *perhaps, necessarily, possibly*

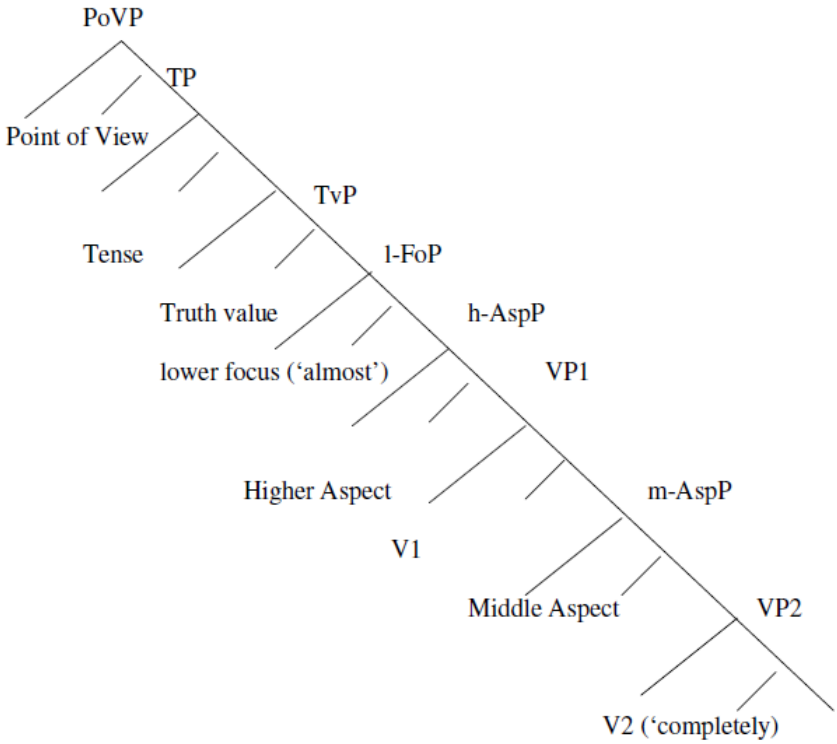
subject-oriented: *willingly, inevitably, cleverly*

middle aspect: *usually, again, often, quickly, already, no longer, still, always, just, soon, briefly, characteristically, almost*

core event: *completely, tutto, well, fast/early, again, often*

Based on the interaction of these verbs with adverbs, she discusses the interface of syntax and semantics. She proposes two different aspect projections and verb phrases under each projection. As seen in (48), the upper AspP is called higher aspect (h-AspP) and she locates the outer aspect of the complex events and the verbs without core events in this projection. The agent-oriented adverbs are also presented in this layer. On the other hand, the core events are located in the lower VP. She calls the lower AspP middle aspect (m-AspP) and explains the difference between lower AspP and lower VP as the following: Middle aspect zone contains the elements which do not look into the core event but modify the time span the event occupies. She argues that resutitive again belongs to this zone since it takes scope over the core event but not the agentive causing the event represented by the higher event.

(48) Tenny's (2000) syntactic representation:



In this subsection, I have presented two different theories which have different presuppositions about aspectual representation. The classification in Section 2.2.2.1 distinguishing between event types assuming that this classification occurs in the lexicon and the verbal domain. In contrast, the theory in this section has the assumption that the classification in 2.2.2.1 occurs in syntax and events make this distinction. In Section 5.4, I will discuss my findings in the light of both approaches. However, I will argue that Tenny's (2000) approach which analyzes aspectual categories at the event level presents a more comprehensive analysis of the empirical data.

2.3 Perfect

In addition to the simple tenses, the interaction of Reference Time (RT) with UT and ET brings in perfect tenses. Briefly, perfect puts an event prior to a reference time

without anchoring the event to a specific point (Bhatt & Pancheva, 2005; Binnick, 1991; Comrie, 1985; Iatridou, Anagnostopoulou & Izvorski, 2001; Smith, 1997). RT is set by the adverbials in the sentences as seen in the examples (49a), (49c) and (49d). In (49a), the event *living* is presented within a time frame whose left boundary is set by the adverbial, "since I started Boğaziçi University" and its right boundary is set by the present time expressed by the auxiliary have. In contrast, the adverbials in (49c) and (49d); "by tomorrow" and "before leaving the city" set the right boundary of the time span and the left boundary is not known. The tense in these sentences puts the time span, not the event time in a place in the timeline. Iatridou et al. (2001) argues that future perfect and past perfect are derived with the adverbials while present perfect is also derived by the tense, in addition to time adverbials as in (49b). The present tense in this sentence determines the right boundary of the time span and states that the event *handing in* has occured somewhere before this reference point.

(49) a. I have been living in Istanbul since I started Boğaziçi University.

b. I have handed in the assignment.

c. Mary will have handled the assignment by tomorrow.

d. John had visited his family before leaving the city.

The outcome is present perfect when UT and RT overlap. When RT precedes UT, the tense is past perfect. On the other hand, it is future perfect when RT follows UT. The summary of the interactions of UT, ET and RT, and their results are given in Table 2.

Table 2. The Interaction of UT, ET, and RT, and Tenses

The Interaction	Tenses
ET=UT	Present tense
ET<UT	Past tense
ET>UT	Future tense
ET<RT=UT	Present perfect
ET<RT<UT	Past perfect
ET<RT and RT>UT	Future perfect

The discussion above might imply that perfect is related only to tense. However, different proposals have been made about what "perfect" actually is. Some consider it just a construction (Smith, 1997), others an aspectual category (Comrie, 1985) or a semantic notion which is expressed via different grammatical tools in different languages (Bhatt & Pancheva, 2005). Smith (1997) is among the scholars who view perfect as a construction. She expresses that perfect constructions which have a certain temporal and aspectual meaning appear in many languages. She defines four meanings of perfect: (a) A perfect event precedes RT, (b) the construction has a resultant stative value, (c) the viewpoint aspect in perfect sentences is perfective and (d) a special property is ascribed to the subject. However, she still needs to explain how the languages which do not have perfect constructions convey the semantic meaning which is derived by the perfect constructions in other languages.

Likewise, Comrie (1976) provides an explanation similar to Smith's explanation that perfect is also an aspect by discussing the meanings which perfect expresses. He gives these meanings as types of perfect: perfect of result, experiential perfect, perfect of persistent situation, and perfect of recent past, which are

commonly referred to and discussed in the literature "Perfect of result" means that a present state is referred to as being the result of some past situation. The present state can be also expressed by adjectives, stative verbs or past tense. "Experiential perfect" refers to a case where a given situation has held at least once during some time in the past leading up to the present. "Perfect of the persistent situation" is used to describe a situation that started in the past but continues into the present. "Perfect of recent past" may be used where the present relevance of a past situation.

The following sentences are examples of these types. The result of the sentence (50) is that Aslı is still in Portugal. This sentence can be also interpreted as experiential perfect and it would express that Aslı has this experience in her lifetime as in the sentence (51). (52) conveys a habitual reading via the adverbial *for years*. Lastly, the recent past meaning in the sentence (53) is given by the adverb *just*.

(50) Aslı has gone to Portugal. *perfect of a result*

(51) Can has been to Antalya. *experiential perfect*

(52) Zeynep has shopped there for years. *perfect of a persistent situation*

(53) Gül has just entered the room. *perfect of a recent past*

Building up on various meanings which the perfect conveys, Bhatt and Pancheva (2005) raised the question whether a uniform meaning for the perfect can be posited. This question and the attempt to propose a unified theory for the perfect has a remarkable place in the literature because languages differ from each other with respect to the interaction of imperfective forms and meaning, different kinds of adverbials, or time references with the perfect. Bhatt and Pancheva (2005) summarizes three main general theories; Extended Now (XN) Theory, Anteriority Theory, and Result State Theory. Result State and Anteriority Theory mainly

propose that ET is prior to RT; however, these assumptions cannot explain the Universal Perfect in which ET coincides with RT.

Regarding Extended Now (XN) theory, Iatridou et al. (2001) propose that perfect introduces an interval that extends back from the Reference Time and affirms that the untensed proposition that it takes in its scope is true at that interval. The left boundary of the interval introduced by perfect is set by adverbials and its right boundary is set by tense. If the event denoted under the perfect occurs before RT which is set by tense or adverbials, this is Existential Perfect and the event is bounded; in other words, the viewpoint aspect of the event is perfective as seen in (54).

(54) Can has been to Rome.

If the event occurs throughout a certain interval, this means that Event Time coincides with Reference Time and this is Universal Perfect as in (55). The viewpoint aspect of the event is imperfective and it is unbounded. In terms of this theory, sentences (50), (51), and (53) are argued to denote E(xperiential) Perfect while sentence (52) denotes U(niversal) Perfect if Zeynep still goes on shopping at the same place.

(55) Elif has been living in Istanbul.

This parallelism seen between E-perfect and perfective, and U-perfect and imperfective raises the question whether the languages which strictly require perfective verb forms in perfect constructions like Greek entail only E-perfect. Iatridou et al. (2001) discuss this issue and argue that U-perfect requires an unbounded event rather than a progressive form. Recall that the section 2.2.2.2 presented Smith's (1997) discussion on the difference between imperfective and progressive. Thus, building upon this difference, Iatridou et al (2001) propose that

individual-level states and adjectival predicates are imperfective even though they have non-progressive forms. Consider (56):

(56) *She has always lived here but she doesn't anymore.

Iatridou et al. (2001) point out that first clause in (56) is a case of U-perfect because it cannot be uttered in a closed context expressed by the second clause "she doesn't anymore". This shows that the event is unbounded and the unboundedness of the event cannot be cancelled. This discussion will have a crucial role in the discussion of the functions of the aspectual markers in TİD.

This section summarized the different views and explanations for perfect. They will be referred back in detail in the subsequent chapters to discuss the semantic properties of markers in TİD. The thesis will adopt the viewpoint considering perfect as a semantic notion because TİD does not have a marker dedicated to perfect. Perfect interpretation of the structures is derived by the interaction of temporal/aspectual markers and the adverbials.

CHAPTER 3

TENSE AND ASPECT IN SIGN LANGUAGES

This chapter will briefly overview the findings of the studies on tense and aspect in sign languages. This chapter will focus on how the semantic notions; tense and aspect discussed in the previous chapter are realized in the grammars of sign languages and present the studies on these topics. After various strategies in different sign languages are briefly presented, this chapter will focus on the studies on tense and aspect in TİD.

3.1 Expressions of tense and aspect in sign languages

The grammatical categories tense and aspect are generally realized by either free morphemes, such as adverbials or auxiliaries, or bound morphemes, such as inflectional morphemes. As stated in the previous chapter, some languages express temporal information with time adverbials rather than with inflectional morphemes on the verb. These languages are called "tenseless languages" which sign languages are also considered to belong to (Binnick, 1991). Most sign languages express time information via timelines, time adverbials or lexical tense markers while some sign languages occasionally express time via suppletive forms or inflection on the lexical verb (Cogen, 1977; Meir & Sandler, 2008; Pfau, Steinbach, & Woll, 2013; Sinte, 2013). On the other hand, aspectual information has been more often observed to be marked within the verbal domain via different strategies such as internal modification of the sign, manual aspectual morphemes, and nonmanual markers. The following subsections will summarize the various strategies which sign languages adopt to express time and aspectual information.

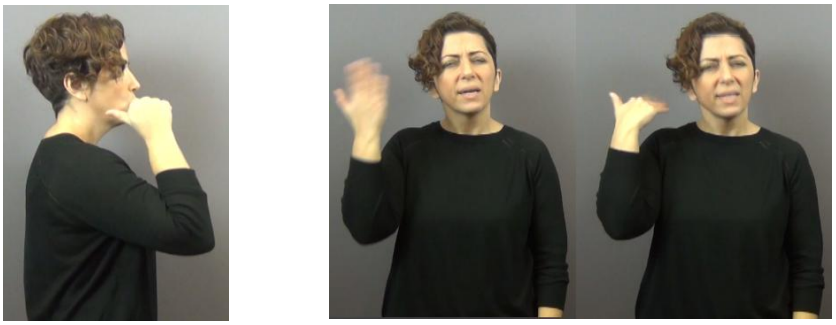
3.1.1 Tense

It has been observed that sign languages generally do not have tense inflection. Rather, they are reported to convey time information via other strategies such as time adverbials, timelines and nonmanual markers. A sentence can be interpreted within a time-frame which is established in the previous sentence or somewhere in the discourse. A sentence without a time reference is mostly interpreted in the present tense, as a default (Cabeza Pereiro & Fernandez Soneira, 2004; Pfau et al., 2013). The general strategies which sign languages adopt to give time information are time lines, time adverbials, lexical tense markers. Even though sign languages are reported not to have tense inflection on the verb, a few studies claim that some sign languages (LIS and BSL) have tense inflection. This subsection will first summarize the studies in the literature and then briefly describe how time information is conveyed in TİD.

3.1.1.1 Timelines

One of the most observed strategies across sign languages is timelines (Cabeza Pereiro & Fernandez Soneira, 2004; Meir & Sandler, 2008; Le Guen, 2012; Pfau et al., 2013; Sinte, 2013). Pfau et al. (2013) define timeline as using space metaphorically in time expressions (p. 189). In time lines, time is considered as a line and events are considered to lie on this line. Although Pfau et al. (2013) claim that time lines are culture-specific, the most frequently observed timeline is the one in which the signer's body behaves as a reference point for the simple tenses and forms a distinction between past and future.

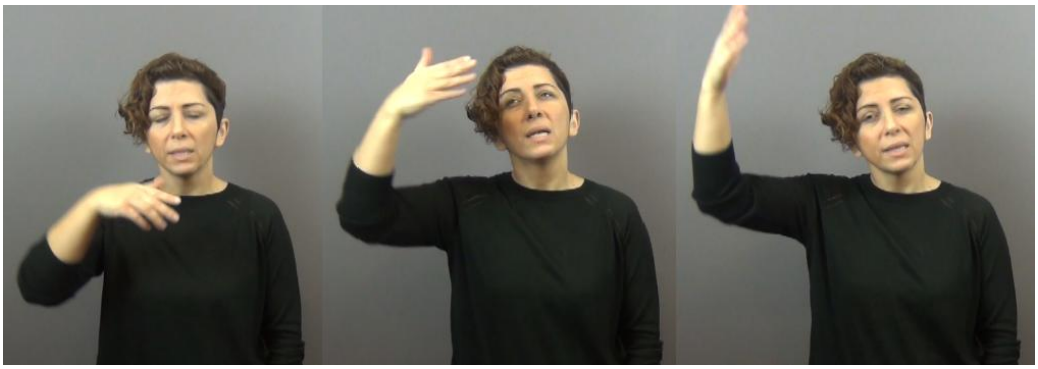
This timeline lies from the space behind the signer's body over the shoulder to his front on the ipsilateral side (Pfau et al., 2013). When the signer's body is viewed as a reference point and coincides with the present, the space behind of his body represents referred as the past and the space at the front as the future. The handshapes of the time adverbs in TİD as seen in Figures 2 and 3 referring to past and future are usually the same while those of the past move backward and those of the future move forward. Timelines are conceptual settings which are realized via time adverbials. In other words, how time adverbials such as YESTERDAY, TOMORROW, or UNTIL EVENING are situated in the signing space and relative to each other makes the concept of timeline visible.



a. YESTERDAY b. IN THE PAST

Figure 2. Time adverbials DÜN 'yesterday' and ESKİDEN 'in the past' referring to the past in TİD

a. TOMORROW



b. IN THE FUTURE

Figure 3. Time adverbials YARIN 'tomorrow' and İLERİDE 'in the future' referring to the future in TİD

Another observation related to timelines is that the length of the movement path of time adverbials changes according to the distance in time. That is, the timeline is manupilated to express the distance in time. To illustrate, if the time reference is near future, the time adverbial is signed near the body. On the other hand, if the reference is distant future, it is signed away from the body.

Pfau et al. (2013) and Sinte (2013) mention that some cultures see the past as definite, experienced and known; consequently, the past events are conceptualized as being located in the front. Yet, the future has not been experienced and a person cannot see what will happen, so the future events are conceptualized as lying behind the body. Both conceptualizations view timeline as running from the back of the signer to the front, but they differ in how the past and the future are placed on this line.

Sinte (2013) summarizes different time lines used across sign languages and offers six different types of time lines as seen in Figure 4 taken from Sinte (2013). It may be hard to find all these lines in a single sign language, yet a language can make use of some of them.

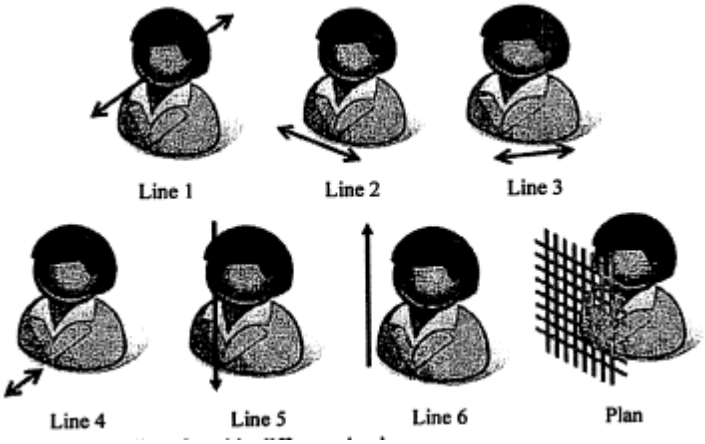


Figure 4. Timelines found in different sign languages

Briefly, Line 1 is the one previously described. Line 2 is used to sequence the events relative to a reference point. In addition to situating events related to a reference point, Line 3 is used in some sign languages to express calendar units or adpositional signs such as BEFORE and AFTER on the contralateral side. Sinte (2013) explains Line 4 which is a blending of the three first lines as a mixed line. It is used to talk about the events in very near future. Days of the week are located on Line 5 also called as 'top-down-line' which is observed in NGT and LSQ (Sinte, 2013). The last line, Line 6, is oriented from bottom to top in contrast to Line 5. This line is observed in the lexical signs such as GROW or LIVE. The movement path of these signs are from the bottom to top. Lastly, Sinte (2013) explains, in addition to six timelines, that "Plan" is used for calendar units as a schedule of a week or a year.

Timelines are conceptually used in sign languages. How the notions of past and future are culturally perceived affects their places on the timeline. Another difference is how timeline is oriented in the signing space across sign languages. Languages may use more than one timeline or complex lines. Cabeza Pereiro and Fernandez Soneira (2004) report the observation that LSE makes a distinction between simple and relative tenses while using timelines.

3.1.1.2 Time adverbials and lexical tense markers

Another strategy to convey time information is time adverbials. As mentioned before, every sentence in sign languages is not overtly inflected for tense; however, this information is given in the discourse via time adverbials. Sapountzaki (2005) cites Grenoble (1992) that although Russian Sign Langague has three temporal markers for the past, present and future, they are not obligatory in every sentence. For Spanish Sign Language (LSE), Cabeza Pereiro and Fernandez Soneira (2004) observe that time reference is set via time adverbials in the discourse and it is maintained until a new time adverbial is explicitly expressed.

According to Aarons, Kegl and Neidle (1995) time adverbials in ASL can appear clause initially, clause finally, or before the modal verb. The sentences in (57) depict the syntactic positions in which time adverbials can occur. In addition to these, the time adverbial TOMORROW in (57a) which are taken from Aarons et al. (1995) also occurs in topic position as seen in (57d).

(57) a. TOMORROW j-o-h-n BUY CAR (ASL, Aarons et al., 1995)

"John will buy a car tomorrow."

b. j-o-h-n BUY CAR TOMORROW

"John will buy a car tomorrow."

c. j-o-h-n TOMORROW CAN BUY CAR

" John can buy a car tomorrow."

_____top

d. TOMORROW j-o-h-n BUY CAR

"John will buy a car tomorrow."

Aarons et al (1995) argue that besides time adverbials, ASL also has lexical tense markers FUTURE-TNS, PAST-TNS, or FORMERLY-TNS which have a more restricted syntactic distribution. In terms of syntactic distribution, lexical tense markers have the same pattern with modal verbs and they, like modal verbs, occur to the left of sentential negation, in contrast with main verbs which occur to the right of the sentential negation. In (58a) the modal verb SHOULD occurs to the left of negation sign NOT and the lexical verb occurs to the right of NOT. In (58b) the lexical tense marker FUTURE-TNS occurs in the same position as the modal sign SHOULD in (58a). (58c) shows that a time adverbial such as TOMORROW cannot occur in this position.The sentence (58c) has an ungrammatical structure as the time adverbial occurs to the left of the sentential negation while the structure is grammatical with the lexical tense marker FUTURE-TNS in (58b).

(58) a. j-o-h-n SHOULD NOT BUY HOUSE
_____neg (ASL, Aarons et al., 1995)

"John should not buy the house."

_____neg

b. j-o-h-n FUTURE-TNS NOT BUY HOUSE

"John will not buy the house."

_____neg

c. * j-o-h-n TOMORROW NOT BUY HOUSE

"John (will) not buy the house."

As they pattern with modals, a lexical tense marker cannot co-occur with a modal in a sentence, as seen in (59a) and (59b). Aarons et al. (1995) argue that the ungrammaticality is not due to semantics because a modal can occur with a time adverbial such as FUTURE-ADV as in the sentence (59c).

(59) a. * j-o-h-n CAN FUTURE-TNS BUY HOUSE (ASL, Aarons et al., 1995)

"John can will buy a house."

b. * j-o-h-n FUTURE-TNS CAN BUY HOUSE

"John will be able to buy a house."

c. j-o-h-n CAN BUY HOUSE FUTURE-ADV

"In the future, John can buy a house."

Another distinction with time adverbials and lexical tense markers in ASL is that their articulatory properties change in the preverbal position. For the first group, as we saw in the previous subsection, distant vs. near distinction in time can be provided by manipulating path movement.The sentences in (60) have the time adverb FUTURE-ADV and the lexical tense marker FUTURE-TNS and when the path of FUTURE-ADV is lengthened this yields ungrammaticality. So, the path length of a time adverb cannot be manipulated to express near future vs. distant future in the preverbal position. However, the sentence is grammatical with the marker FUTURE-TNS with fixed path length in the preverbal position (ASL, Aarons et al., 1995).

(60) a. * j-o-h-n [FUTURE-ADV]$_{\textit{Variable path length}}$ NOT BUY CAR

"John will not buy a car."

_____neg

b. j-o-h-n [FUTURE-TNS]$_{\textit{Fixed path length}}$ NOT BUY CAR

"John will not buy a car."

This subsection has presented the studies that investigate whether sign languages have a tense marking in the verbal domain. While Cabeza Pereiro and Fernandez Soneira (2004), Pfau et al. (2013) and Sapountzaki (2005) arrive at the conclusion that adverbials or lexical temporal markers are not obligatory in every

sentence, Aarons et al. (1995) argue that ASL has tense markers which are distinct from time adverbials.

3.1.1.3 Tense inflection on the verb

Although sign languages are generally considered to be tenseless languages, some scholars have claimed that there are some cases of tense inflection in some sign languages. For instance, Pfau et al. (2013) cite that Sutton-Spence and Woll (1999) note that there are some dialects of BSL where a number of verbs has suppletive forms, expressing different tenses. Similarly, Jacobowitz and Stokoe (1988) have reported that the flexion in the articulation of ASL verbs like COME and GO appear to change according to tense. Flexion at the wrist, elbow, or shoulder expresses either future tense or past tense without other change. Another strategy which can be considered as inflection on the verb is nonmanuals. Gökgöz (2009), for instance, claims that TİD conveys time information nonmanually on the verb via head-nod. This is discussed in detail in Section 5.1.1.

Zucchi (2006) observes that in LIS shoulder position changes according to the tense while signing the verb. As you can see in the examples in (61), "shoulder back" occurs when the reference is the past and "shoulder forward" when the reference is the future. Neutral position refers to the present. Interestingly, the nonmanual marker does not co-occur with the time adverbial TOMORROW in (61c). Zucchi (2006) explains that time adverbials shift the speech time and LIS past and future tenses are absolute tenses (cf. Zucchi 2006 for a detailed explanation).

___sb

(61) a. GIANNI HOUSE BUY (LIS, Zucchi, 2006)

"Gianni bought a house."

___sf

b. GIANNI HOUSE BUY

"Gianni will buy a house."

____sf

c. *TOMORROW GIANNI HOUSE BUY

"Tomorrow Gianni will buy a house."

This section has summarized the findings regarding the different strategies to convey time information in various sign languages which are considered tenseless languages. The common strategy to express time in the sentence or in the discourse is using time adverbials like LONG AGO, TOMORROW, or NOW. In addition to adverbials, using a timeline is another strategy for expressing time. Most commonly observed timeline takes the signer's body as a reference point for present, divides the line into two: usually the space in front of the signer represents the future and the space behind the signer represents the past. Time spans are also expressed via timelines, which additionally creates various lines across sign languages. Lastly, nonmanual markers and different lexical items expressing different tenses are among the strategies that express temporal information.

3.1.2 Aspect

While tense inflection seems to be rare in sign languages, it has been reported that sign languages do have a rich aspectual system. Aspect is realized via internal modifications of the signs, nonmanuals, and manual aspectual markers (Pfau et al., 2013). These strategies can be observed for both situation and viewpoint aspect. The strategies which have been described and discussed in the literature will be summarized in this section.

3.1.2.1 Internal modification

What is meant by internal modification is changing the internal structure of a sign. This change can be realized in two ways; one is by modifying the movement path of the sign while the other is by modifying the movement of the sign. Aspectual notions such as continuative, iterative, and habitual have been observed to be expressed with internal modification of the verb signs in many sign languages (Pfau et al. 2013). Building upon Klima and Bellugi (1979), 15 different aspect types in ASL, Rathmann (2005) suggests that ASL has bound inflectional morphemes as continuative, iterative, habitual, and conative. [11] To be brief and not to diverge from the main focus, I will summarize the most observed ones across sign languages without discussing them in detail.

All these types involve modifications on the movement path rather than on the movement itself. When the continuative morpheme[12] is combined with a verb, the form expresses that an event occurs longer than usual and as uninterrupted. As an example, when the verb RUN is combined with the continuative morpheme, the combination yields the meaning 'to run for a long time'. The movement is generally realized as an arc movement. Sutton-Spence and Woll (1999) report that the verbs in BSL which do not have a path movement are marked by an extended hold to express continuative. This can be classified in the second category which is the modification of the movement.

[11] Internal modification can also be referred to as inflection on the verb. Scholars have two different views about the morphological nature of the modification. The first camp (Klima & Bellugi, 1979; Rathmann, 2005; Pfau, Steinbach, & Woll, 2013 among others) view the modifications as distinct morphemes referring to a distinct semantic notion. On the other hand, the second camp (Bergmann & Dahl, 1994; Liddell, 2003) argues that these modifications resemble ideophones, thus they are onomatopoetic. This thesis does not go into the details of the morphological analysis of verbs with aspectual inflection and chooses to consider the internal modification as morphemes due to their consistent occurence and specific meaning.

[12] I refer to this kind of repetitions as inflection because it is productively observed with different verbs by giving the same semantic notions: continuative or distribution. These kinds of marking are also called inflection in Rathmann's (2003) study which focuses on lexical aspectual categories; achievements, accomplishments, and activities, and similar patterns there too were observed.

The second morpheme discussed in Pfau et al. (2013) is iterative which expresses that the event consists of a series of events occurring over and over. An iterative event, unlike continuative, consists of sub-events which end and start sequentially. For instance, the movement of the verb root GIVE is repeated between the same agreement loci when the verb is combined with the iterative morpheme by yielding the meaning 'to give (it) again and again'. Another realization can be that the verb GIVE agrees with different loci in the signing space rather than agreeing with the same locus, which yields distributive meaning. Distributive marking will be discussed again in describing aspectual marking in TİD in Chapter 4.

Both the habitual and the iterative are phonologically realized as reduplication although they differ in denoting an endpoint in their event structure. In contrast to iterative, the reduplication for habitual is reported as being smaller and faster (Pfau et al., 2013). In NGT, it is also observed that nonmanuals, gaze aversion, lax lips with protruding tongue, and slowly circling head movement accompany the reduplication (Hoiting & Slobin, 2001).

In addition to the modification of the movement path, the movement of a verb can also be modified to express aspectual information. Zeshan (2002, 2003), Kubuş (2008), and Gökgöz (2009) state that in TİD, a single accentuated movement expresses perfective meaning while the movement gets longer for imperfective meaning as seen in Figures 5 and 6. Nonmanuals can also accompany these modifications.

Figure 5. The nonmanual marking for the future

Figure 6. The nonmanual marking for the past

3.1.2.2 Nonmanual markers

Another way to express aspectual information can be via nonmanual markers which can either accompany movement patterns of the verb, manual aspectual markers or occur only with the verb. Hoiting and Slobin (2001) express that puffed cheeks or pursed lips and blowing of the air occur with the reduplication in order to express continuative in NGT. Pfau et al. (2013) cite that in Swedish Sign Language, a cyclic arc movement is signed by the head while the hand stays still in order to give durative meaning (Bergmann, 1983). Dikyuva (2011) analyzes three mouth gestures in TİD which convey aspectual information. The studies on TİD will be presented in detail in Section 3.2.

3.1.2.3 Manual aspectual markers

Unlike internal modification and nonmanual markers which have been reported to express both perfective and imperfective viewpoints, most of the manual aspectual markers discussed in the literature have been reported to express perfective and perfect meaning, except Egyptian Sign Language (LIM) which has also a manual marker for continuative. Examples of these markers are FINISH in ASL (Duffy, 2007; Fischer & Gough, 1999; Rathmann, 2005), FATTO 'done' in LIS (Zucchi et al., 2010), ALREADY in ISL (Meir, 1999; Meir & Sandler, 2008), FINISH in Hong Kong Sign Language (HKSL), (Tang, 2009), FINISH and CONTINUE in Egyptian Sign Language (LIM) (Fan, 2014), FINISH in CSL (Shanghai) (Liu, 2016), and FINISH#pah in Kata Kolok which is a village sign language in Bali (de Vos, 2012).

In ASL, the aspectual marker FINISH can occur preverbally or at the sentence final position (Duffy, 2007; Fischer & Gough, 1999; Rathmann, 2005). Fischer and Gough (1999) describe the various functions of FINISH: as the main lexical verb, as a marker of a sequence of actions, and as a marker signaling subordination. When it is used as an auxiliary, it functions as a perfective marker without having a particular time reference. For the following sentence (62) which is taken from Fischer and Gough (1999), the writers highlight the observation that FINISH emphasizes completion. The sentence (63) depicts another function of FINISH, which is sequencing the events. This will be crucial in the discussion of a perfective marker in TİD.

(62) YOU HAVE EAT FINISH SWALLOW+[13] (ASL, Fischer&Gough, 1999)
ONE, TWO, THREE, FOUR?
"You had and ate and swallowed one? 2? 3? 4?"

[13] '+' indicates the repetition of a sign.

(63) YOU EAT FINISH WE GO SHOPPING

"After you eat, we'll go shopping."

Building upon Fischer and Gough's findings (1999), Rathmann (2005) proposes that the function of the marker varies depending on its position; i.e. the preverbal FINISH encodes perfect while the one at the sentence final position encodes perfective. Additionally, he gives two different examples for the argumentation that preverbal FINISH expresses only existential perfect. The following sentences (64) and (65) are provided to show that 10 YEAR is compatible with both existential and universal perfect while SINCE 10 YEAR is not.

(64) I FINISH LIVE HAMBURG 10 YEAR (ASL, Rathmann, 2005)

a. ok 'I have lived in Hamburg for 10 years.' (existential)

b. ok 'I have lived in Hamburg for the past 10 years.' (universal)

(65) a. ?SINCE 10 YEAR I FINISH LIVE AUSTIN

'Since 10 years ago, I have lived in Austin.' (existential)

b. ok SINCE 10 YEAR I LIVE AUSTIN

'For the past 10 years, I have lived in Austin.' (universal)

In the sentence (64), he claims that the sentence can express both E-perfect and U-perfect meaning as seen in (64a) and (64b).However, (64b) which is a confusing example because the author states (64b) can occur in a context where "the speaker has just moved out of Hamburg in the morning" (p. 152). Actually, this context creates a bounded event and the event of living does not hold in the right boundary of the perfect (cf. Iatridou et al., 2001). Thus, the following sentence (65) supports that preverbal FINISH yields only existential perfect as the adverbial SINCE requires an unbounded event and its occurrence with preverbal FINISH causes ungrammaticality or, at least, a question mark.Actually, Duffy (2007) carries

on with the discussion above. Based on Iatridou et al. (2001), he also shows that preverbal FINISH is incompatible with the contexts in which the event is unbounded. Contexts of universal perfect require imperfective verb forms, individual-level predicates, or adjectives to express an unbounded event. Preverbal FINISH is incompatible with all these contexts, thus, he proposes that it has also perfective meaning in addition to perfect meaning.

As for LIS, Zucchi et al. (2010) show that there is a similar aspectual marker, FATTO 'done'. They discuss that FATTO indicates that the event has reached an endpoint. Due to this property, it is incompatible with the contexts in which the event is an open process. Additionally, FATTO occurs in contexts which express anteriority, as in sentence (66), but except the ones expressing stativity and non-agentivity, as in sentence (67). The explanation they offer for this incompatibility is that stative and non-agentive structures do not have an inherent culmination point. To summarize, FATTO expresses two kinds of information: (i) temporal information expressing that the event has occurred before a reference point, and (ii) aspectual information entailing that the event has culminated. Even though they do not word it this way, this conclusion together with the findings described above points to existential perfect. In other words, I would suggest that FATTO like FINISH in ASL denotes existential perfect.

(66) Anteriority meaning: (LIS, Zucchi et al., 2010)

GIANNI HOUSE BUILD FATTO

"Gianni has built a house."

(67) Stativity and non-agentive meaning:

?? GIANNI STINK FATTO

"Gianni has stunk."

Similar questions are raised by Meir (1999) and, Meir and Sandler (2008) for ALREADY in ISL. It, unlike FATTO and FINISH, has a wider array of functions. To illustrate, it can express perfect of a result, existential perfect, or termination of events, as the sentences (68) to (71) demonstrate. As seen in sentence (71), ALREADY is also different from FATTO and FINISH in terms of compatibility with imperfective forms. Additionally, the event denoted by the verb phrase must hold before a reference point. When all the functions are considered from a broader viewpoint, ALREADY seems to carry out various meanings which are the keystones for the perfect constructions.

(68) WEEK FOLLOWING THEY$_{(dual)}$ ALREADY MARRIED (ISL, Meir, 1999)

"Next week, they will already be married." future time adverbial

(69) YOU ALREADY EAT CHINESE? experiential perfect

"Have you (ever) eaten Chinese food?"

(70) I ALREADY WRITE LETTER SISTER MY termination meaning

(...but I got tired and didn't finish it. I'll finish it later)

(71) I ALREADY STUDY$_{(durational)}$ EXAM imperfective form

"I was engaged in studying for a long time, I have finished studying."

When we turn non-European languages like HKSL (Tang, 2009), CSL (Shanghai) (Liu, 2016), Kata Kolok (de Vos, 2012) or LIM (Fan, 2014), we see that they may have different properties than European ones. For instance, Liu (2016) reports that CSL (Shanghai) has both manual and nonmanual signs to encode aspectual information. Liu (2016) indicates that the movement path of the aspectual markers such as FINISH, BEGIN, or AGAIN can incorporate into the movement path of the main verb. Alternatively, these manual aspectual signs can also be signed

after the main verb. Another similar case is reported for LIM by Fan (2014). Different from the sign languages studied up to date, LIM is reported to also have a manual aspectual marker for the progressive meaning, as well, CONTINUE. Fan (2014) points out that both the progressive and perfective markers can incorporate into the main verb. The perfective marker shows total incorporation. The progressive marker, on the other hand, is signed with the dominant hand while the lexical verb is signed with the non-dominant hand, as shown in the figure below. The main verb is signed on the non-dominant hand while signing the progressive marker as you can see in the following picture taken from Fan (2014, p. 75). The signer first signs the verb, then the main verb continues to appear as a buoy while the dominant hand signs the progressive marker CONTINUE.

(Figure 4.2)
RH: IX_2 TIDY-UP CONTINUE+
LH: TIDY-UP- - - - - - - - - - -
'You continue tidying up (the house).' [Asdaa' 2006: 147-148]

Figure 7. The incorporation of the progressive marker with the main verb

So far we have seen examples of aspectual markers glossed as DONE, CONTUNUE, FINISH, ALREADY etc. A peculiar property of some of these markers is their incompatibility with regular sentential negative markers. This has been reported for signs such as FINISH and ALREADY FATTO in ASL, LIS, ISL, LIM, and Kata Kolok (de Vos, 2012; Duffy, 2007; Fan, 2014; Fischer & Gough, 1999; Meir, 1999; Meir & Sandler, 2008; Rathmann, 2005; Zucchi et al, 2010). The

authors of these studies express that these sentences require another marker which is different than sentential negation in order to achieve negative perfect or perfective meaning. For instance, one needs to use NOT-YET in ASL, NIENTE or NON-ANCORA in LIS, ZERO in ISL, and KONDEN 'not-yet' in Kata Kolok as you can see in sentences (72) to (75). As for LIM, Fan (2014) glosses the negative sign as FRUS (frustrative aspect) in the sentence (75) as he initially considers this marker as a distinct aspectual marker. The explanation is that FRUS does not change the polarity of the preceding elements; instead, it entails the non-success or non-achievement of the preceding element. However, while presenting the aspectual markers, he proposes that further research is needed to consider this marker as the negative counterpart of the perfective marker.

(72) a. *YUKI FINISH NOT EAT PIE (ASL, Fischer & Gough, 1999)

b. YUKI NOT-YET FINISH EAT PIE

"Yuki hasn't finished eating his pie."

(73) a. *GIANNI EAT FATTO NON (LIS, Zucchi et al., 2010)

"Gianni has not eaten."

b. GIANNI DO-HOMEWORK NON-ANCORA

c. GIANNI DO-HOMEWORK NIENTE

"Gianni has not done his homework."

(74) I EAT ZERO (ISL, Meir, 1999)

"I haven't eaten yet."

(75) _____ht (LIM, Fan, 2014)

WORK LOOK-FOR (1) FRUS

"She was looking for work, to no avail."

Zucchi et al. (2010) propose an explanation for the requirement of a distinct marker in negative perfect or perfective structures. Although this case is not unique to sign languages, they propose that the motivation is not aspect but presupposition. In other words, they claim that the sentences in (73) have a specific presupposition and the negative marker actually negates this presupposition. This proposal will be discussed in detail in relation to the negative perfective markers in TİD in Section 6.1.2.

In this section, I summarized various strategies to convey aspectual information across sign languages. These strategies contain changing the internal movement of the verb according to the aspectual notion which the verb conveys. Manual and nonmanual markers are also nother ways to express the temporal information of the event. In the light of these studies, the next section will specifically present the literature about tense and aspect studies in TİD.

3.2. Tense and aspect studies in TİD

Zeshan (2002, 2003) are the first works that describe how tense and aspect are encoded in TİD. She proposes that time information is given via time adverbials while completive meaning is given by modifying the movement of the base form of the verb, more specifically, by a single accentuated hand movement. Furthermore, Kubuş (2008) observes that shorter repetitive movement in the verb yields incompletive meaning. Building upon this knowledge, Gökgöz (2009) states that tense is also expressed nonmanually in addition to time adverbials. He observes that repetitive head movement accompanying repetitive hand movement expresses future while single head nod expresses past. Present is expressed by the non-existence of head nod, but the existence of repetitive hand movement. Lastly, Arık (2012) is the

first one who examined timelines in TİD, but he just studied Line 1 according to Sinte (2013) categories.

Zeshan (2003) points out that in order to convey aspectual information, TİD also has manual aspectual markers , which is one of the research questions in this thesis. She claims that TAMAM 'done, complete, ready' and BİTTİ 'finish(ed)' occur at the end of a sentence or "a chunk of discourse" to express completive. Additionally, OLMAK 'be, become' is reported to have a resultative meaning. Figure 8 depicts the signs TAMAM and BİTTİ mentioned in Zeshan (2003). See chapter 5 where I show the difference between BİTTİ as discussed in Zeshan and BİT as discussed in this study.

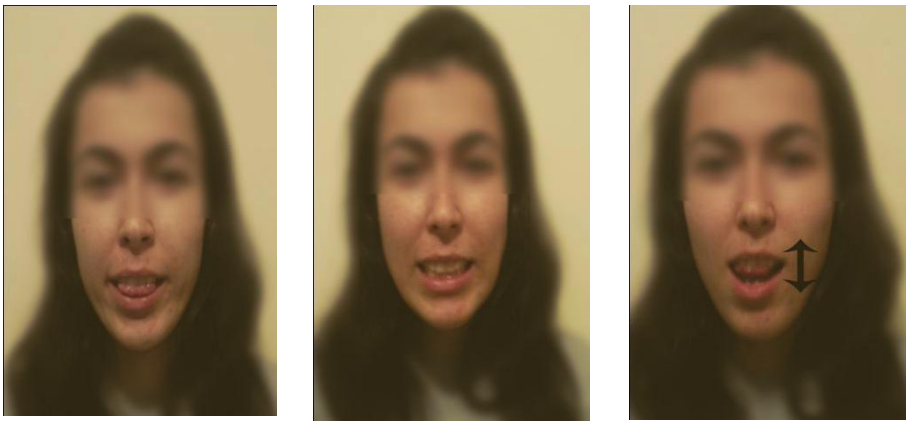
TAMAM BİTTİ[14]

Figure 8. TAMAM and BİTTİ signs respectively in Zeshan (2003; p 50-51)

Internal modification and manual aspectual markers are not the sole strategies employed in TİD to convey aspectual information. Dikyuva (2011) analyzes three mouth gestures 'bn', 'lele', and 'ee' which carry different kinds of aspectual information as you can see in Figure 9. He analyzes 'ee' as an inceptive marker and 'lele' as a continuative marker. 'bn' is reported as a completive marker while Kubuş and Rathmann (2009) derive the conclusion that the nonmanual marker 'bn' which

[14] In the discussions with the consultants and Okan Kubuş (p.c.) the sign in Figure 8 is rather considered to behave like a discourse marker and means something like ‘all came to an end’ for the mentioned discourse. Thereby, the sign which Zeshan (2003) presented signals a change in the discourse, which is expected to be followed by the introduction of a new topic.

they call 'pt' conveys past and telic meaning. The authors have distinct grounds for their reasonings and conclusions. Dikyuva (2011) arrived at the conclusion by mainly focusing on the compatibility of 'bn' with different situation-aspectual categories; activity, accomplishment, and state verbs[15]. He observes that 'bn' is compatible with verbs from the some situation aspect categories, and that it does not behave uniformly with all the verbs in a single category. He derives the conclusion based on the observation that the verbs compatible with 'bn' have a clear beginning and end. On the other hand, Kubuş and Rathmann (2009) holding the opposite view analyzes its compatibility with various time adverbials, especially with past tense.



'bn' 'ee' 'lele'

Figure 9. Nonmanual aspectual markers in Dikyuva (2011)

These results inevitably raise the following questions: Does the marker 'bn' solely have these meanings or do the structures in which it occurs yield these meanings? If the second case holds, then the nonmanual marker 'bn' creates a morphologically complex morpheme which can occur in the contexts that provide the targetted semantic environments for past, perfect or perfective. In short, the question is whether it is the grammaticalized form 'bn' or the context, which derives the

[15] Dikyuva (2011) classifies the categories as action-verbs, process-verbs and state-verbs in his study. However, following Smith (1997), I will refer to them using the more commonly used classification, namely as activities, accomplishments and states, respectively, in order to be consistent throughout the thesis.

desired meaning. This is one of the main research questions which this thesis aims to shed light on.

This chapter has presented the studies on tense and aspect in sign language literature. The aim was to present how these notions are grammaticalized in sign languages. Bearing the findings in the literature and the differences among sign languages in mind, Chapter 5 will present the methodology in which datasets and consultant profiles will be provided. However, before focusing on the findings of my study, I will describe the methodology in the next chapter.

CHAPTER 4

METHODOLOGY

This chapter presents the research methods employed to answer the questions raised in the previous chapter. It also provides the profile of the consultants who participated in the studies and shared their judgements with respect to the grammaticality of sentences. Finally, it presents information about hardware and software used during data collection in the study.

4.1 Consultants' profiles

The collected data contains scanned corpus, data elictitation via semi-controlled tasks, and grammaticality judgement tasks from 15 fluent deaf consultants, 1 hard of hearing TID-Turkish bilingual interpreter, and 2 deaf research assistants who are fluent TİD signers.The interpreter and the assistants are female, were aged between 27-39 during the time of data collection, and living in Istanbul. All three of them actively are involved in the deaf community. As for the consultants, eight are female, aged between 28 and 63, and four are male, aged between 24 and 47. All of the consultants are active members of the deaf community and were living in Istanbul during the data collection. The parents of three of the native signers are also deaf. One of them has an elder deaf brother and a deaf sister. All 13 of them are fluent signers.

4.2 Data elicitation procedures

This thesis contains three different data sets. All the tasks that elicited these data were conducted by the interpreter. The first one was conducted as a semi-guided and

controlled task and the consultants were asked to describe the picture strips to the interpreter. The second was scanning the data which were collected for various other research questions for perfective markers. The last group is grammaticality judgement tasks whose aim was to identify some structures which were not observed in the naturalistic and semi-controlled data.

4.2.1 Semi-controlled tasks

The consultants were given three different picture strips and asked to describe the events to the interpreter. These picture strips were taken from Totem Field Stroyboards (totemfieldstoryboards.org) which were designed for linguistic research and each was designed to elicit a specific construction such as a certain tense or aspect. A part from one of the picture strips "Chamellon Story" is provided in Figure 10.

Figure 10. A part from the picture strip "Chameleon Story"

Each consultant looked at each strip and described it to the interpreter who did not know the story and did not see the strip. This task was carried out by six consultants. Recordings are totally 140-minute and the parts containing BİT were discussed with the interperters after I scanned through all of the recordings. Most commonly observed manual aspectual sign is BİT 'finish' (Zeshan, 2003) which 'bn' (Dikyuva, 2011) accompanies in these tasks as illustrated in sentence (76).

(76)

WHITE BE TRY BİT.

"Now, (it) tried to become white."

A variety of contexts, other than picture strips were signed to the consultants by the interpreter and they were asked how they would answer in these contexts. This task was also carried out with each consultant separately. (77) is an excerpt from these contexts.

(77) "Suppose you have a friend named Can and he is a sportive person and has a regular plan for every day. He does his sport every day and reads his books and his newspaper. In the mornings, he runs for half an hour. He reads his newspaper for half an hour. In the evenings, he reads for an hour. It is not necessary for him to end the paper and the book. The targeted sentences are in (i) and (ii). First, the consultant was asked to summarize what Can does in a day. After that, the sentences such as in (i) and (ii) were provided and asked whether they are felicitous or compatible with this context. The contexts were discussed with the interpreter before the recording sessions. In the recording sessions, the interpreter signed the contexts to the consultant.

(i) CAN HALF HOUR READ BİT

'Can (has) read the book for half an hour.'

(ii) ____bn

CAN AN^HOUR RUN

'Can (has) run for an hour.'

4.2.2 Naturalistic data

Firstly, the glossed corpusof the previous reseach studies were scanned for the manual aspectual markers BİT 'finish', SON 'end', TAMAM 'done, ready', HAZIR 'ready' and MÜSAİT 'available, ready' some of which such as BİT and TAMAM were mentioned in Zeshan (2003). For these signs, glosses of 346 tasks were scanned. The most frequently occuring sign among these is BİT with 400 occurences that contain all of its functions as main verb, functional sign, or discourse marker. TAMAM 'done' which is the second most frequently observed sign occurs in approximately 250 sentences. Following them, HAZIR 'ready', SON 'end' and MÜSAİT 'available, ready' occur in approximately 100, 60 and 25 sentences, respectively. These sentences actually contain all their functions: as a main verb,as a marker sequencing event and as a discourse marker. Table 3 presents the numbers of the occurences of these signs according to their functions. These numbers are approximate numbers and not all the functions are tested.

Table 3. The Number of Occurrences of the Signs in the Corpus

Signs/Functions	Lexical usage	Discourse marker	Functional usage	Total number of occurences
BİT 'finish'	200	170	130	400
TAMAM 'done,	120	95	35	250
HAZIR 'ready'	47	35	18	100
SON 'end'	28	19	13	60
MÜSAİT 'available, ready	17	7	6	25

In the following step, video recordings containing these markers were analyzed to identify whether the signs had phonological differences when they were

used with different functions as a lexical verb, as an aspectual sign or a discourse marker. These videos were also analyzed in order to identify accompanying nonmanuals such as 'bn' (Dikyuva, 2011). 'ap' which is puffed cheeks and the negative counterpart of perfective aspectual signs was also observed in the data (Dikyuva et al., 2015).

Due to time and space constraints, an analysis for all the manual signs cannot be provided in this thesis. It will focus on mostly the manual sign BİT 'finish' as it co-occurs with the nonmanual sign 'bn' (Dikyuva, 2011), in addition to being the most frequently observed manual aspectual sign among the targeted signs. This leads to another question which is whether the manual sign 'BİT' and the nonmanual sign 'bn' express the same aspectual notion completive. In order to answer this question, a number of grammaticality judgement tasks were conducted.

4.2.3 Grammaticality judgment tasks

In these tasks, sentences were provided in contexts rather than in isolation. The reason behind this is to make sure that the targetted meaning is conveyed. Context can retrict other possibilities and lead the consultant to the targeted meaning.

The contexts were signed to the consultants by an interpreter in all the grammaticality judgment tasks. The contexts were not recorded in advance so that the consultants had the oppurtunity to ask clarification questions. Then, the consultants were asked to judge the compatibility of the targeted sentence with the context. Their responses were also recorded. An example for these contexts is provided in (78).

(78) "Zeynep started to write a letter to her sister but the door bell rang and she did not complete writing the letter:

(i) ZEYNEP LETTER WRITE BİT

"Zeynep wrote a letter."

(ii) _____bn

ZEYNEP LETTER WRITE

"Zeynep wrote a letter."

(iii) ___bn

ZEYNEP LETTER WRITE BİT

"Zeynep wrote a letter."

Being a tense marker is among the possible functions for the signs BİT and 'bn'. In order to understand whether these two are aspect or tense markers, the consultants were also presented with sentences containing these signs and different time adverbials. However, to be able to manipulate tense information in the sentences, and to test whether the nonmanual marker head nod conveys tense information with all kinds of verbs (Gökgöz, 2009; Kubuş, 2008; Zeshan, 2002, 2003). I presented the consultants with a houndred signed sentences which were isolated sentences that were recorded beforehand. The consultants were asked to identify the time of the sentence. Some sentences contain time adverbials while some of them do not. The verbs in the sentences were chosen from different verb categories like plain, agreement and spatial as seen in (79).

(79) a. PARTY IX-POSS$_1$ FRIEND $_3$INVITE$_1$ backward agreement

"I invited my friends to the party."

b. IX-POSS$_1$ MOTHER $_1$CALL$_3$ forward agreement

"I will call my mother."

c. NOW REMEMBER plain

"Now, I have remembered."

d. YESTERDAY IZMIR$_a$ $_a$COME spatial

"Yesterday, she came from Izmir."

Furthermore, they were also state, activity or accomplishment verbs as in (80) to test whether the telicity or lexical semantic category affect the interpretation of the default tense. The sentences also contained time adverbials in different syntactic positions such as sentence initial, preverbal or sentence-final as in (81).

(80) a. IX-POSS$_1$ DAUGHTER CHESS WANT state

"My daughter wants chess."

b. IX$_a$ RECIPE$_a$ TRY activity

"I tried this recipe."

c. ISTANBUL$_a$ GO$_a$ accomplishment

"He went to Istanbul."

(81) a. YESTERDAY IZMIR$_a$ $_a$COME sentence-initial

"Yesterday, she came from Izmir."

b. IZMIR$_a$ YESTERDAY $_a$COME preverbal

"Yesterday, she came from Izmir."

c. *IZMIR$_a$ $_a$COME YESTERDAY sentence-final

"Yesterday, she came from Izmir."

4.3 Hardware and software

The data were collected using three SONY Handycam cameras, recorded in HD format. In order to capture the prosodic properties and nonmanual markers, the data were recorded from three different angles, one capturing the whole scene including both informants and the others standing across from each consultant.

The collected data were converted to a research friendly format on Adobe Premier CS6 and Media Encoder CS6. They were stored in Cloud Storage units. The data found grammatical by the consultants were analyzed in either VLC Media Player or Adobe Premier to analyze the phonological changes and nonmanual markers better.

CHAPTER 5

TENSE AND ASPECT IN TURKISH SIGN LANGUAGE

This chapter focuses on how tense and aspect is conveyed in TİD. Firstly, based on the findings in Gökgöz (2009), I discuss that head movement over the verb is not always used to express tense. Moreover, I propose that tense is expressed by time adverbials such as YESTERDAY, NOW, or TOMORROW. In addition to the expession of tense, a subsection is devoted to how timelines are used in TİD to express time spans such as FROM MARCH TILL NOW or different times of a day such as FROM MORNING TILL EVENING. Next, that the strategies to express aspectual notions such as continuative and distribution and how they change the internal structure of the lexical signs are presented in Section 5.2.1. Lastly, the signs which can be aspectual markers in TİD are presented and their various functions such as lexical uses, aspect marking, and discourse marking are briefly discussed via the examples from the data collected during the project TİDBİL (TÜBİTAK#111K314) conducted at Boğaziçi University.

5.1 Time information and tense in TİD

As I showed in Chapter 3, sign languages employ various strategies to express time information, from time adverbials to time lines (Meir & Sandler, 2008; Pfau et al., 2013; Sapountzaki, 2005; Sinte, 2013; Zucchi, 2006). As for TİD, Gökgöz (2009) reports that changes in the head movement accompanying the verb express the distinction between Past and Future interpretations. As shown before in Figure 5 and 6 which are taken from Gökgöz (2009, p. 29-30) and figures are repeated below as Figure 11 and 12, single head nod expresses Past while the

repetitive head nod expresses Future. Present, on the other hand, is reported to be expressed via the absence of head nod. This is summarized in Table 4 taken from Gökgöz (2009, p.32).

Figure 11. The nonmanual marking for the future

Figure 12. The nonmanual marking for the past

Table 4. Interaction of Tense and Aspect in TİD in Gökgöz (2009, p. 32)

Tense	Aspect	Interpretation
Single head nod	Single hand movement	Past
Repetitive head nod	Repetitive hand movement	future
Absence of head nod	Repetitive hand movement	present

The following subsections will present how time adverbials and time lines are employed to introduce time information in TİD. I describe the tasks I conducted in order to test whether Gökgöz's (2009) claims could be replicated. The first

subsection focuses on the use of time adverbials while the following one focuses on timelines.

5.1.1 Time adverbials and how temporal information is expressed in TİD

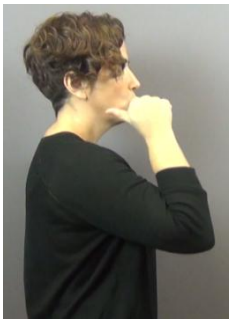
For this study, the consultants were presented with different sentences and asked what the time of the sentence was. Some sentences contain overt time adverbials while others do not have a time adverbial but a head movement described in Gökgöz (2009). They were asked to respond by identifying the time of the event as past, present, or future, or by providing an appropriate time adverbial as now, yesterday, or tomorrow. Additionally, the time adverbials in the sentences were presented in different syntactic positions. Before presenting the findings, I would like to describe the properties of the time adverbials in TİD which will be discussed in detail in 5.1.2.

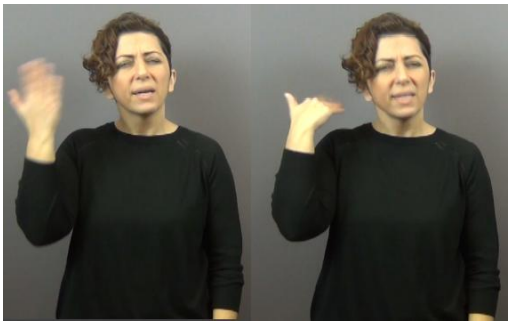
Basically, adverbials referring to the past can be either a pointing sign with a thumb[16] extended pointing to space in the back of the signer as seen in DÜN 'yesterday' in (82a) or a flat hand with a repetitive movement as in ESKİDEN 'in the past' in (82b), whose orientation is backward. In contrast, for future reference which can be seen in (83), the sign YARIN 'tomorrow' has the same handshape as DÜN 'yesterday' but the sign moves to point to the signer's front. The sign İLERİDE 'in the future' has the same handshape, flat hand as in ESKİDEN 'in the past', as seen in (83b), but moves forward. The sign IN THE PAST also has the nonmanuals furrowed eyebrows and eye squint which I argue play a role in distinguishing between near past and distant past. This case will be discussed in 5.1.2. As for the distinction of near and distant past or future, it has been reported for other sign languages that movement proceeds backward in adverbials expressing past, while it

[16] The signer in the picture in (82a) signs YESTERDAY with ASL A-bar, however some signers sign it with the index finger.

proceeds forward in adverbials expressing future. Present time adverbials are articulated by a downward movement in front of the signer (Pfau et al., 2013, p. 189). As seen in (84a), BUGÜN 'today' is a downward pointing sing, signed in the neutral signing space. ŞİMDİ 'now' in (84b) is also signed in front of the signer with both hands and its orientation is also downward, but the movement is trill movement. It can also be signed only with the dominant hand.

(82) Time adverbials DÜN 'yesterday' and ESKİDEN 'in the past' referring to the past in TİD:

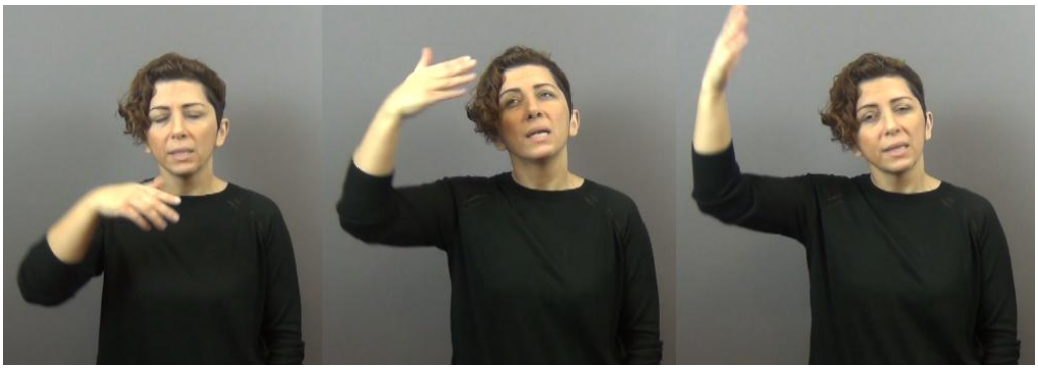




a. YESTERDAY b. IN THE PAST

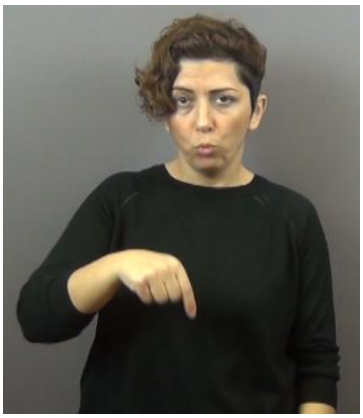
(83) Time adverbials YARIN 'tomorrow' and İLERİDE 'in the future' referring to the future in TİD:

a. TOMORROW

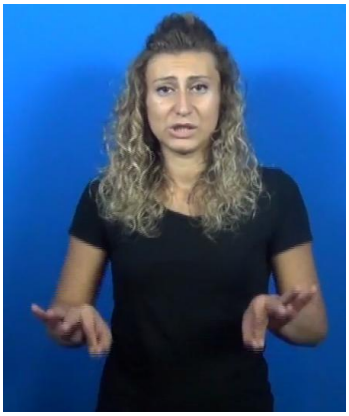


b.IN THE FUTURE

(84) Time adverbials BUGÜN 'today' and ŞİMDİ 'now':



a. TODAY



b. NOW

One of the questions I asked in this part of the study was whether there were any restrictions on the distribution of time adverbials in a sentence. Thus, one of the tasks involved sentences where the time adverbials were presented in different positions namely in sentence initial, preverbal and sentence final positions as in (85), (86) and (87). The consultants were asked to judge the grammaticality of the sentences. They found (85) and (86) grammatical while (87) ungrammatical. Although the sentences do not have any nonmanual marker on the time adverbial, one consultant commented that the sentence in (86) is distinct from (85) in terms of focus. That is the emphasis is on the time adverbial in (85). Focus marking in TİD has not been studied much so far so I will not comment on this any further. In

conclusion, time adverbials in TİD can occur either in sentence initial or in preverbal position but sentence-final position is not acceptable.

(85) YESTERDAY IZMIR COME

"Yesterday, I came from Izmir."

(86) IZMIR YESTERDAY COME

"I came from Izmir yesterday."

(87) *IZMIR COME YESTERDAY

"I came from Izmir yesterday."

Table 5 presents the consultants' judgements for time adverbials in different syntactic positions. The numbers represent the number of the consultants who judged the sentence as grammatical in ratio to the total number of consultants. The time adverbials tested are YESTERDAY, A LITTLE WHILE AGO, LAST WEEK, TWO^WEEKS AGO, TOMORROW, TWO ^WEEKS LATER, TODAY and NOW. As can be seen in Table 5, all the time adverbials were accepted in both sentence-initial and preverbal positions. Some of the consultants accepted them also in the sentence-final position. However, the number of the consultants who found this configuration is very small (1-3). Thus, I do not consider their judgements here. Another reason may be that this position, the sentence final position can be devoted to focus position, however, this interesting point is not in the scope of this thesis.

Table 5. The Consultants' Judgments for Time Adverbials in Different Syntactic Positions

	S-initial	Preverb	S-final
YESTERDAY	7/7	7/7	2/7
TOMORROW	7/7	7/7	1/7
A LITTLE WHILE AGO	7/7	7/7	0/7
TODAY	7/7	7/7	2/7
LAST WEEK	7/7	7/7	1/7
NOW	7/7	7/7	3/7
TWO^WEEKS AGO	7/7	7/7	0/7
TWO^WEEKS LATER	7/7	7/7	0/7

In the next task, the data presented to the consultants consist of two types: one type consists of single sentences without a time adverbial but a nonmanual marking described in Gökgöz (2009) as marking a tense feature. The second type consists of a combination of two or three sentences which have time adverbials in different sentences.

As for the responses to the first type of data, there was a wide range of answers regarding the time of the event despite the presence of nonmanual marking (cf. Gökgöz, 2009). See Appendix A for detailed information on the answers. To illustrate, (88) contains repetitive head nod 'rhn' over the verb which is expected to convey that the tense of the sentence is future according to Gökgöz (2009). However,

some of the consultants interpreted the tense of the sentence as past tense and the event completed while some of them interpreted it as present tense. Likewise, half of the consultants interpreted the event expressed in (89) as a present or a future event while the other half interpreted it as a past event although the sentence has a single head nod over the verb, which is expected to mark the tense of the sentence as past in Gökgöz (2009). These interpretations show that head nod is not the predictor of conveying time information.

_____rhn

(88) DINNER FOR BREAD BUY

Intended: "I will buy bread for the dinner."

Predicted: Future

Informants' responses: 3/7 past & completed

4/7 present

_____shn

(89) IX_1 IX_2 $_1TELL_2$

Intended: "I told you."

Predicted: past

Informants' responses: 3/7 present or future

4/7 past

Another factor affecting the interpretation of time reference may be the telicity of the events. When the event was telic, the consultants mostly interpreted the event to have taken place in the past. On the other hand, when the event was atelic, most of the consultants judged the time as present. The sentence (88) containing a telic event was reported to have occured in the past while the atelic event in (89) as in the present by most of the consultants. Many scholars have pointed out the fact

that for many sign languages, the default tense interpretation is present when a time adverbial does not occur in the sentence (Cabeza Pereiro & Fernandez Soneira, 2004; Pfau et al., 2013). However, in these TİD examples we see that the telicity of the events may also affect how the time of the sentence is interpreted.

Cabeza Pereiro and Fernandez Soneira (2004) points out that "once a time reference is established, it is maintained until a new one is explicitly expressed" (p. 66). To test this in TİD, another two tasks were conducted to see how time adverbials are interpreted in a sequence, a mini discourse. The data in the first task contained a sentence which has a time adverbial introduced s-initially and there is no other time adverbial in the following sentence, as in (90a) and (90b), and a time adverbial introduced after the matrix verb as in (90c) [17], the same sentence is differently presented. As seen in (90a and b), all the events (remembering, forgetting and giving) are interpreted to have taken place in the time set by the time adverbials. In other words, all the events are interpreted to have happened at YESTERDAY in (90a) while in (90b), they are interpreted to have taken place in the recent past as in "I have remembered.". On the other hand, the consultants interpreted REMEMBER in (90c) to have taken place in recent past while FORGET and GIVE to have taken place at YESTERDAY, although there is no time adverbial in sentence initial-position. The interpretation in (90c) is not possible. The interpretation of (90c) is similar to (90b), but the only difference is that in (90c) the event time of 'forget' is overtly expressed while the event time of 'remember' in (90b) is not known. These

[17] One can argue that the sentences in (90) are not embedded sentences because if the sentence would be "I have remembered to forget to give the assignment.", REMEMBER should have occurred at the sentence-final position because TİD is a SOV language (Sevinç, 2006). Rather, the sentences are sequenced.

However, Göksel and Kelepir (2016) attested that different verbs affect the word order in clausal complementation in two ways: (i) some verbs; WANT-type strictly follows SOV word order while some verbs; KNOW-type allows the verb to occur after the subject and take the complement, namely the order is SVO. They grouped THINK, UNDERSTAND, KNOW.THAT as KNOW-type verbs. If REMEMBER belongs to KNOW-type category, these sentences can be complex sentences.

are actually consistent with (87). Since YESTERDAY cannot be s-final, it cannot be interpreted as belonging to the first sentence. To summarize, time adverbial sets the event time for the sentence in which it occurs, and the reference time for the events in occurring after it.

(90) a. *YESTERDAY* REMEMBER ASSIGMENT $_1$GIVE FORGET

"Yesterday, I remembered. I had forgotten to give the assignment."

b. *NOW* REMEMBER ASSIGMENT $_1$GIVE FORGET

"Now, I have remembered. I forgot to give assignment."

c. REMEMBER *YESTERDAY* ASSIGNMENT $_1$GIVE FORGET

(i) "I have remembered. I forgot to give the assignment yesterday."

(ii) *"I remembered yesterday. I forgot to give the assignment."

The findings show that time adverbials set the time frame for the events and all the events are interpreted with respect to this time frame unless a new time adverbial is introduced (Cabeza Pereiro and Fernandez Soneira 2004; Pfau et al., 2013).

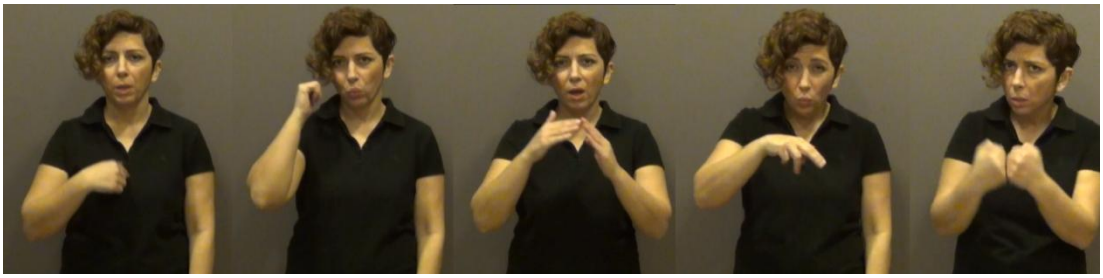
Next, I discuss although Gökgöz (2009) does not state how an imperfective event in the past is phonologically realized, one can infer from Table 5 that an imperfective event in the past should have the phonological realization as a single head nod (shn) at the end of repetitive hand movement. (91) provides another counterexample to Gökgöz's (2009) proposal that tense is expressed with head nod (hn) while the aspect is expressed with the movement in the verb as the modification of the manual articulation. The sentence in (91) is marked as past tense via the time adverbial YESTERDAY. The event is imperfective because it is interrupted with another event, an accident, which we can infer from the context. As you can see in (91) the verb is signed with head forward (hf) and eyebrow raising (er) instead of

head nod. Head nod is also not present on the verbs SEE and CALL even though the time of both events are past. Moreover, the consultants were asked whether single head nod at the end of repetitive hand movement of WALK is acceptable in this context, they reported that head nod should accompany the movement in the hand or it should be like the one presented in (91).

(91) _____es

_____er _____bt

_____hf



IX_1 YESTERDAY HOUSE WALK ACCIDENT

_____bt

_____hf

_____shn _____htr

SEE IMMEDIATELY CALL POLICE CALL

"Yesterday, I was walking home, saw an accident, immediately called the police."

In addition to time adverbials, some lexical signs such as ALWAYS[18] convey a habitual or generic meaning. In other words, they may distribute over the events

[18] This sign may be analyzed as an aspectual adverbial or an operator which gives a generic or habitual reading. However, this topic is beyond the scope of this thesis.

over a time span. The sentences containing ALWAYS were presented to the consultants as in (92) and they reported that the event does not have a specific time. Moreover, the verb is also inflected[19] with the repetitive movement. The inflection is realized as repeating the sign in different loci. The adverb and the inflection are presented in Figures 13 and 14. The sentences which have an inflected verb but not an adverbial as in (92b) are also interpreted as generic sentences. Crucially, these sentences have generic meaning either with or without an adverbial. Thus, one can conclude that genericity is most probably expressed by the distributive inflection on the verb.

(92) a. FATHER CIVIL SERVANT SO ALWAYS $MOVE_a$ $MOVE_b$ $MOVE_c$

b. FATHER CIVIL SERVANT SO $MOVE_a$ $MOVE_b$ $MOVE_c$

"His/Her father is a civil servant so he/she always moves."

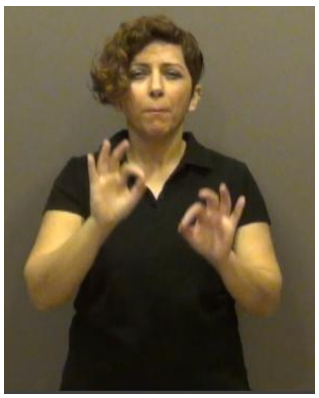


Figure 13. Adverb ALWAYS

[19] I refer to this repetition as inflection because it is productively observed with different verbs by giving the same semantic notion: genericity or habituality. These kinds of marking are also called inflection in Rathmann's (2003) study which focuses on lexical aspectual categories; achievements, accomplishments, and activities, and similar patterns there too were observed.

Figure 14. Inflected form of MOVE

This kind of internal modification is considered to convey aspectual information (Pfau, et al., 2013; Rathmann, 2003). The sentences in (92) are interpreted as present since a time adverbial for the Event Time is not introduced. It is also possible to represent this generic event in the past by introducing a past time adverbial such as IN THE PAST. In this case, the denotation of the sentence with a past time adverbial will be that it is true that the event occurred regularly throughout this time interval.

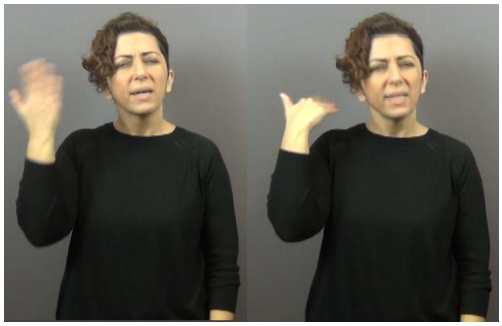
As a summary, time information is overtly conveyed by time adverbials in TİD contrary to Gökgöz's (2009) claim that nonmanual marker, namely head nod is one of the strategies to express tense. In the absence of a time adverbial, the default tense is interpreted as present with atelic events, and past with telic events. Another finding is that the time frame which is set by a time adverbial in the context is true for all the events unless a new time adverbial is introduced.

5.1.2 Time lines in TİD

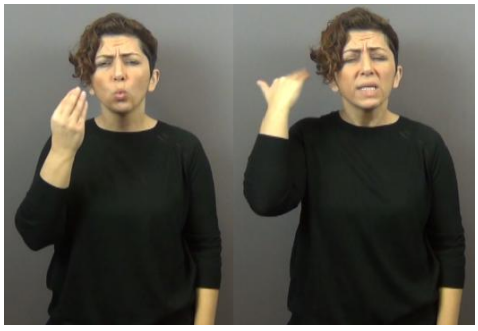
As we saw in Chapter 3 Section 3.1.1.1, using timelines is another strategy to express time information in sign languages (Arık, 2012; Cabeza Pereire & Fernandez Soneria, 2004; Cogen, 1977; Pfau et al., 2013; Sinte, 2013). Time adverbials mentioned in the previous section are pointing signs and they point to the back, front, or the side of the signer depending on the time reference. When the directions of the

pointings are collectively considered, they form a line which stretches from the space over the signer's shoulder to the space in front of her. This line which is the most frequently observed across sign languages is referred to as Line 1 in Sinte's (2013) categorization. Briefly, the adverbials referring to the past in (93) are oriented towards the space behind the signer, the back of the time line whereas the time adverbials referring to the future in (94) are oriented towards the signer's front, in a sense, the front of the time line. Arık (2012) also examined this line in his study. Although he argued that not all the signs related to time such as the signs of days and months do not form this line, I will present another use of this line in the following paragraphs. The reader may refer to the study for a detailed discussion.

(93) Time adverbials ESKİDEN 'in the past' and ÇOK ESKİDEN 'in the distant past respectively:



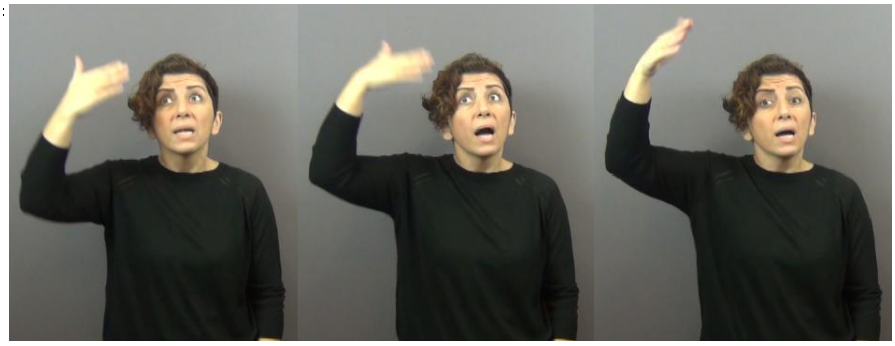
a. ESKİDEN 'in the past'



b. ÇOK ESKİDEN 'in the distant past'

(94) Time adverbials İLERİDE 'in the future' and ÇOK İLERİDE 'in the distant future' respectively:

a. İLERİDE 'in the future'



b. ÇOK İLERİDE 'in the distant future'

Researchers also highlight that the length of path movement correlates with the distance between the times of the events. (Cabeza Pereiro & Fernandez Soneira, 2004; Cogen, 1977; Pfau et al., 2013; Sinte, 2013). In other words, if the time reference is near future, the time adverbial is signed close to the body; on the other hand, if the time reference is distant future, the adverbial is signed far from the body. Changing the distance of the sign relative to the body is one of the strategies which conveys this distinction.

As for TİD, in addition to the lengthening of the path, the intensity of the nonmanuals is also changed as shown in the contrast between (93a) and (93b) and between (94a) and (94b). I observed that these are furrowed brows and eye squint for past reference and eyebrow raising for future reference. Compared to time adverbials ESKİDEN 'in the past' and İLERİDE 'in the future' in (82) and (83) repeated in (93b) and (94), in (93), eyebrow frowning gets intensified and during the squint, the signer's eyes are almost closed. On the other hand, in (94) eyebrows are raised more and eyes are wide open.

Interestingly, the nonmanuals for distant past and distant future are the same as the ones for comparative structures. Both pairs of nonmanuals namely eyebrow raising and eye opening, and eyebrow lowering and eye squint have been observed for the comparative structures in TİD (Kaşıkara, Özsoy, & Tamyürek-Özparlak,

2015; Özsoy & Kaşıkara, in press). Kaşıkara et al., (2015) observed that eyebrow raising and eye opening are seen with MORE constructions while eyebrow lowering and eye squint are attested with LESS constructions. Moreover, in addition to LESS constructions, eyebrow lowering and eye squint occur with MORE constructions which make a comparison of adjectives with negative connotations like BAD and WORSE or ROTTEN and MORE ROTTEN. In addition to negative connotations, they can also accompany the structures such as MORE SMALL or MORE TINY. Near or distant past and future are in a sense making a comparison between the notions near and distant. The similarity is worth paying attention, however, further research is needed to make such a proposal.

Another use of Line 1 is to exploit its space to sign verbs in order to convey that this event has taken place from past to today as seen in Figure 15. The verb; TRANSFER is signed starting from the signer's shoulder to the front on the dominant side while she talks about cultural heritage. One can infer that this area in the signing space may have a semantic connection with time and the signer signs the verb or the time adverbial like YESTERDAY or TOMORROW in this space as long as the phonology of a sign can be manipulated.

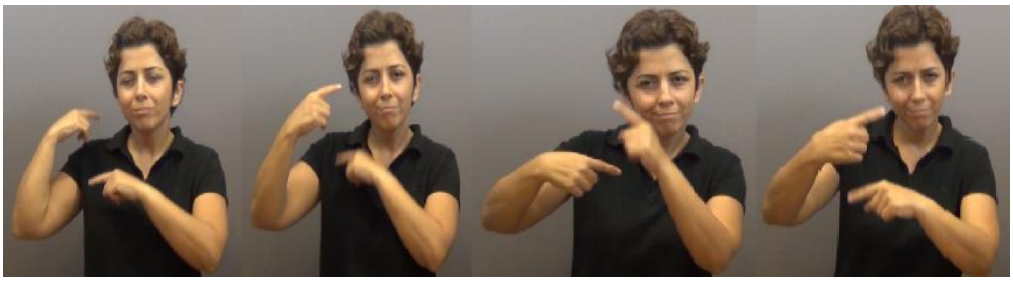


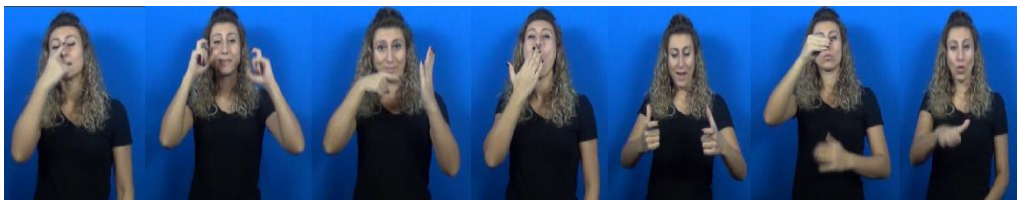
Figure 15. Signing a verb, TRANSFER, using Line1

As for the timelines in TİD, Line 1 refers to the one which I have already discussed. Line 2 is oriented from left to right and it is used to situate events relative to a reference point or a time span between two reference points. The nondominant

hand mostly locates the reference time in the signing space with a pointing sign whose handshape can be either the index finger or ASL-B handshape in (95), taken from Kubuş (2008, p.157).

(95) ASL-B handshape:

This sign is not the handshape of the frequesntly observed pointing sign; namely the index sign, however, in these examples it stands for a specific time expressed in the utterance such as MEAL. In a sense, it assigns a place in the signing space for the time refence for MEAL. Thus, it can be considered as a pointing sign. The time span is signed via the dominant hand which moves either to or from the reference point. For an example, consider the second set of stills in (96). There are two different time periods 'BEFORE MEAL' and 'AFTER MEAL'. As you can see, the signer signs these periods according to the reference point 'MEAL': she first signs the reference point MEAL and then uses Line 2 and locates BEFORE to its left and AFTER to its right. The non-dominant hand stands for MEAL and behaves as a pointing sign.

(96) 

DH[20]: $PICTURE_a$ IX_{3a} $SCHOOL_b$ $CL\text{-}PLACE_b$ CHILD

NDH: CL-PAGE

[20] DH is the abbreviation of dominant hand while NDH is the abbreviation of non-dominant hand.

DH: $MEAL_c$ ACCORDING BEFORE AFTER

NDH: $ASL\text{-}B_c$ ----------

DH: WHAT DO NECESSARY[21]

"What should the child in the picture do before and after the meal?"

The following sentence is an example of path movement referring to a time span. While signing 'AFTER MARCH', the signer first signs MARCH then, places it in the signing space via an index sign on the nondominant hand, and then signs the path movement from the index to an arbitrary point in space.

(97)

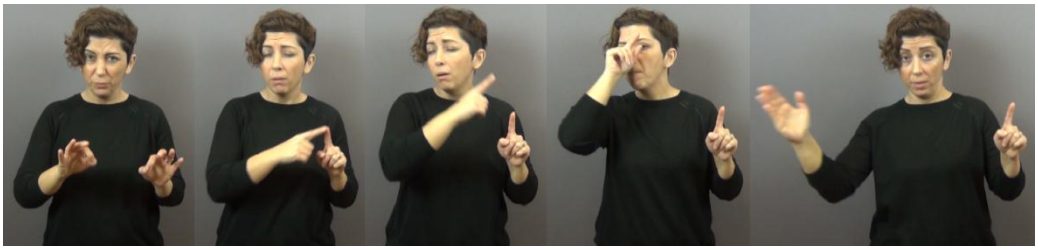
DH: $MARCH_a$ $_aIX_b$

NDH: IX_a ----------

"After March, the project will go on."

The path movement usually goes straight as in (97); however, it can also be an arc movement on the coronal plane when the sign of the reference point interferes with the path. Consider (98).

[21] LAZIM means necessary and it is one of signs which convey modality meaning. For further information, the reader is referred to Özkul (2016).

(98) 

DH: NOW_a aIX_b---------- MARCH ----------$_aIX_b$

NDH: IX_a ----------

"Until March, the project will go on."

In this example, the signer signs both of the boundaries of the time span; the left boundary NOW and the right boundary MARCH while she only signs the left boundary of the time span MARCH in (97). Another difference between (97) and (98) is that the path movement is an arc movement due to the place of the sign MARCH and more interestingly, the sign of MARCH splits the path which the time span forms. The signer signs the path from the index sign until the signing location of the sign MARCH, namely her nose, signs MARCH, and then completes the signing the path. If you pay attention to the picture in (98), you will also realize that she also changes the handshape. The sign starts with the index finger selected and extended and ends with ASL-B handshape.

Another case where the path is an arc movement is the one with the time span involving a time of a day such as 'morning', 'noon' and 'evening'. This is the combination of Line 2 and Line 6 in Sinte's (2013) classification. Line 2 lies parallel to and in front of the signer, and is used to sequence the events while Line 6 is vertical and lies on the dominant side of the signer, and is mostly seen with lexical signs. For instance, the movement of the sign GROW is vertical and the hand moves from neutral space upwards. Pfau et al. (2013) cite Marsaja (2008) where it is reported that the signers of Desa Kolok, a sign language spoken in a village located

close to the equator, use Line 6 and the upwards pointing refers to NOON. As for TİD, when times of a day are mentioned in a sentence, MORNING is located to the contralateral low, NOON is located to the upper mid of the signing space, and EVENING is located in the ipsilateral low, which forms a clockwise movement. In TİD, the placement of the times of a day on the signing space creates a clockwise timeline which is the combination of Line 2 and 6.

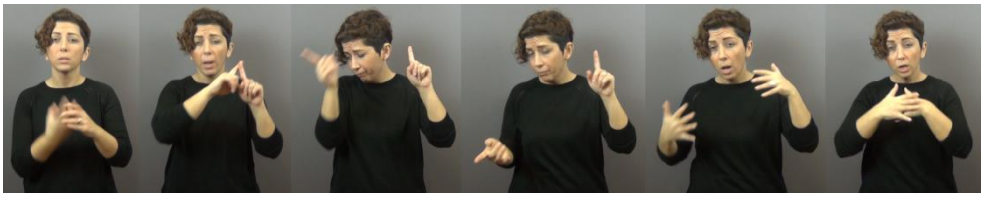
The following sentences are the examples of the arc movement referring to the times of a day. The movement in (99) starts from the contralateral side where the reference for MORNING is located and ends where NOON is signed. Differently from (98), NOON does not split the path even though both MARCH and NOON are signed on the face. While the movement ends in upper mid in (99), in (100a) it continues to the ipsilateral side and moves downward. This, in a sense, reflects the movement of the sun from sunrise to sunset. Additionally, in (100a), the movement of EVENING assimilates to the arc movement. (100b) is another example of the signs FROM MORNING TO EVENING where the internal movement of the sign changes.

(99)

DH: MORNING_a $_a\text{IX}_b$---------- NOON_b

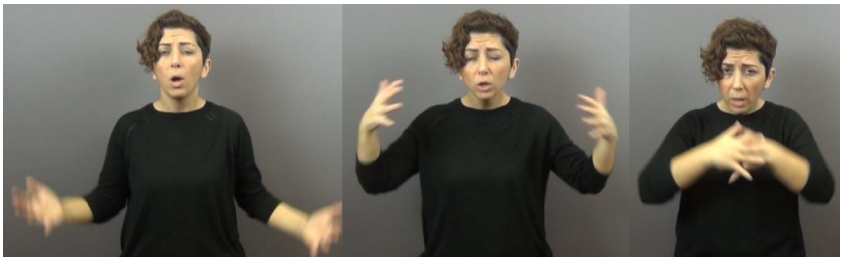
NDH: IX_a ----------

"I waited for the bus from morning until noon."

(100a) 

DH: MORNING$_a$ $_a$IX$_b$ ---------- EVENING$_b$

NDH: IX$_a$ ----------

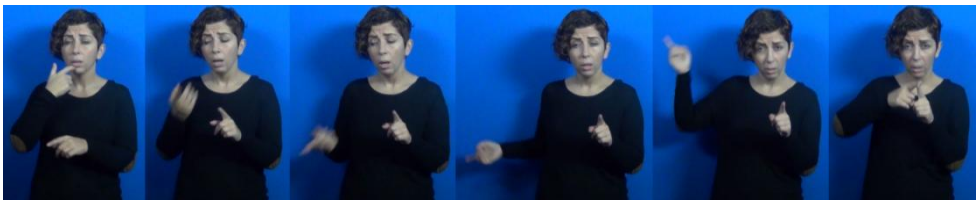
b) 

FROM MORNING TILL EVENING

“I need to study from morning till evening."

As seen in the examples in (99) and (100), timelines can be combined to convey different time spans. Another complex timeline observed in TİD is the combination of Line 1 and Line 2. Consider (101). The line in (101) which means FOR YEARS is actually a circular movement rather than an arc. It starts from the signer's front and ends again in the front with a contact to the index finger on the non-dominant hand in the neutral space. It is used to talk about a person's life.

(101)



DH: YEAR$_a$ $_a$IX$_a$ ----------

NDH: IX$_a$ ----------

"For years, Atatürk served for his country."

In this section, I described a number of timelines in TİD which are used for referring to past and future time spans. IN THE PAST and IN THE FUTURE signs have the same handshape, yet, they move to different directions. The first has a backward movement above the signer's shoulder while the latter has a forward path in front of the signer. Time spans are signed with a path movement which has index signs for the right and left boundaries of the span. The movement path also becomes an arc movement. The paths defined in the literature; Line 1 and Line 2 according to Sinte (2013) as seen in (101) can be combined and form a new line. Moreover, timelines can be observed in the lexical signs such as GROW, namely Line 6.

Next section will present how aspectual information is conveyed in TİD and the main focus is how internal structure of the verbs changes according to the aspectual functions such as distribution, iteration, or continuation. Additionally, I will briefly present the different functions of manual signs as a discourse marker, as a lexical sign, and as an aspectual marker.

5.2 How aspectual information is conveyed in TİD

Section 3.1.2 presented the previous studies on aspect marking in sign languages. The strategies to convey aspectual information across sign languages include the modification of internal movement of the manual sign and nonmanual signs (Dikyuva, 2011; Duffy, 2007; Fan, 2014; Fischer & Gough, 1999; Liu, 2006; Meir, 1999; Pfau et al., 2013; Rathmann, 2005; Tang, 2009; Zeshan, 2002, 2003; Zucchi et al., 2010). In TİD, nonmanual signs like 'bn', 'lele' and 'ee' (Dikyuva, 2011) and manual signs like BİT 'finish' or TAMAM 'done' (Zeshan, 2002, 2003) have been reported to express aspectual information. Zeshan (2003) mentions the manual markers and their potential semantic denotations without presenting a detailed

analysis while Dikyuva (2011) analyzes nonmanual signs 'bn', 'lele' and 'ee' as expressing completive, continuative, and inceptive aspect, respectively. As known from the literature, the modification of the movement of the sign is another tool to express distribution, continuation, or iteration; however, none of these aspectual notions has been discussed in Zeshan (2003) and Dikyuva (2011).

The following section will present how the movement of signs can be modified in order to convey aspectual information. After this, their compatibility with BİT and 'bn' will be presented in the next chapter.

5.2.1 Internal modification of verbs

This section presents how the aspectual notions, namely continuative, distributive and iterative affect the internal structure of the signs. These strategies will play a crucial role in distinguishing the aspectual signs BİT and 'bn' in TİD in terms of both semantic and syntactic analysis. As known from the literature on other sign languages, the most common strategy to encode continuative, distributive, and iterative meaning is either changing the agreement loci of the verb thus, inevitably the movement path, or repeating the verb between the same loci (Klima & Bellugi, 1979; Pfau et al., 2013; Rathmann, 2005).

Consider (103b). Here the agreement verb GIVE is inflected with the distributive morpheme, and the agreement loci are from the first person to each person whose references are located in different loci in the signing space. This case is distinct from the one "He gave the book to them" in (102a) in terms of event structure. Stated more clearly, there exists a single giving event in (102a) while there exist many events and many recipients in (102b). The sign GIVE initially agrees with the agent and the recipient, both of which are located on the contralateral side of the

signer. The movement then goes from one patient to another as seen in (102b) instead of starting from the agent each time. Another possibility is that more than one event can occur between the same people. In other words, the external and internal argument stay the same while the event between them occurs more than once. This kind of change mirrors the phonology of the sign as a circular movement between the same loci as in (102c) (Wilbur, 2010).

102a.

IX-POSS$_{3a}$ BOOK IX-PL$_{3b}$ $_{3a}$GIVE$_{3b}$

"(He) gave his book to them."

b. IX$_1$ EXAM PAPER $_1$GIVE$_{3a}$ GIVE$_{3b}$ GIVE$_{3c}$

"I gave the exam paper to each student."

$_1$GIVE$_{3a}$ GIVE$_{3b}$ GIVE$_{3c}$ GIVE$_{3d}$

c. IX GIRL APPLE $_1$GIVE$_{3a}$ $_1$GIVE$_{3b}$

"I gave continuously the girl apple(s)."

$_1$GIVE$_{3a}$ $_1$GIVE$_{3a}$

The sentences in (102) differ from each other in terms of their internal arguments. That is, the sentence in (102a) contains a singular entity BOOK and this entity is given to the whole group. On the other hand, the sentences in (102b) and (102c) have plural entities EXAM PAPERS and APPLES, respectively. These two sentences also differ in terms of the plurality of the recipients of the event. In other words, the receiver in (102b) is a group of students and each member in this group is given a copy of the exam paper. On the other hand, (102c) has a single recipient, but the sentence denotes multiple giving events to the same recipient.

As for the iterative meaning, the sign, unlike the distributive, does not agree with the different loci but it agrees with the same locus. As seen in (103), the signer uses a classifier to convey that the goal of the event 'tell' is different in each event while the internal argument is the same. She makes clear that the person who she tells something changes by using the classifier on the dominant hand in the last fragment of (103a). In this sign, the movement of the sign 'go' in a sense incorporates with the classifier. Another case is that the goal is the same but the internal argument changes in each event. (103b) presents an example for this case. As seen, the classifier is also used in this sentence but she signs the classifier in the same locus in each iteration.

(103) a.

CL_a $_1TELL_a$ CL_a CL_a

CL_b CL_b $_1TELL_b$

"I tell (the same thing) to different people."

b.

CL_a $_1TELL_a$ CL_a $_1TELL_a$

"I tell (different things) to the same person."

The arc movement as in (102b) or the circular movement as in (102c) are mostly observed with agreement verbs, in fact specifically with forward agreement verbs. It has been observed in this study that with backward agreement verbs, unlike with forward agreement verbs, the sign is repeated with both loci, that is each time the verb agrees with both the agent and the patient as in (104) where the backward agreement verbs are LOAN^TAKE and INVITE. Similar to forward agreement verbs, if the agent is singular, then the verb agrees with the same locus as in (104a). However, when the internal argument is plural as in (104b) the verb agrees with the distinct loci. It is also observed that in sentence (104b), the verb agrees with both the agent and the patient each time.

(104) a. MY FRIEND ALWAYS LOAN $_{3}$TAKE$_{1}$

"My friend always borrows some money from me."

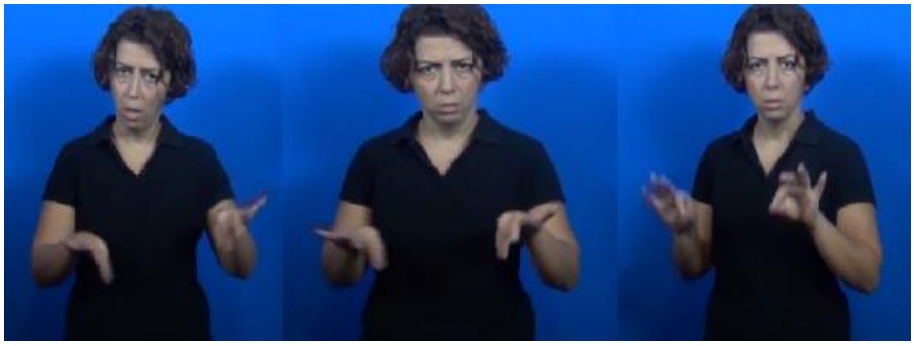
LOAN $_{3}$TAKE$_{1}$ $_{3}$TAKE$_{1}$

b. IX-POSS WORK FRIEND PARTY $_{3a}$INVITE$_{1}$ $_{3b}$INVITE$_{1}$ $_{3c}$INVITE$_{1}$

"I will invite my officemates to the party."

$_{3a}$INVITE$_{1}$ $_{3b}$INVITE$_{1}$ $_{3c}$INVITE$_{1}$

Reduplication of verbs to express distribution is observed with plain verbs, as well. The verb is signed either in the same locus or signed and reduplicated in various loci. As seen in (105) a plain verb PREPARE is signed in distinct loci to present more than one event of 'prepare'. As observed in (105) and other examples in this section, the events are placed onto the signing space from the signer's contralateral side to her ipsilateral side (c.f. Steinbach, Nuhbalaoğlu, Wienholz, & Onea, 2015). On the other hand, the sign in (106) is a body-anchored sign and it can be signed repetitively with the dominant hand as in (106a) or it can be signed sequentially with both the dominant and the non-dominant hand as in (106b), which does not yield any difference in meaning.

(105) 

PREPARE PREPARE PREPARE

"I prepared the bags."

(106) a.

DH: HOUSE GO NO NO NO

NDH: HOUSE----------

"I went (to look for) a house, there is no suitable house."

b.

DH: HOUSE GO GO NO NO NO NOT-EXIST

NDH: GO GO---------- NO----------

"I went (to look for) house, there is no suitable house."

For spatial verbs, the signs and the path movement are reduplicated to express the existence of more than one event. As with plain verbs, the reduplication can occur with only the dominant hand or with both the dominant and the non-dominant hand. However, this difference, unlike plain verbs, results from the plurality of agent. To state it more clearly, if the agent is singular and actualizes more than one event of "flying", the sign is repeated only with the dominant hand as in (107a). On the other

hand, in the cases in which the agent is also plural, the sign is reduplicated with both the dominant and the non-dominant hand as in (107b).

(107)

a.

DH: WORLD CL-WORLD FLY FLY FLY

NDH: CL-WORLD----------

"I have flown to many places in the world."

b.

DH: AIRPORT FLY FLY FLY

NDH: FLY FLY FLY

" The flights in the airport fly to many places."

Sentences (106) and (107) have the same spatial verb FLY. In (107a), the signer says that she has flown to many places around the world and visited many places. In contrast, in (107b), she says that many flights at the airport fly to different places. The main difference is the plurality of the agent.

In addition to signing with both hands, another strategy is observed: the entity classifier can also incorporate into the movement of the spatial verbs like COME or GO. In the following examples in (109) and (110), the speaker talks about a tournament and the sportsmen that attended it. In order to express that sportsmen around the world come to Istanbul for the tournament and return to their home countries, the handshapes of the signs COME and GO change and incorporate with

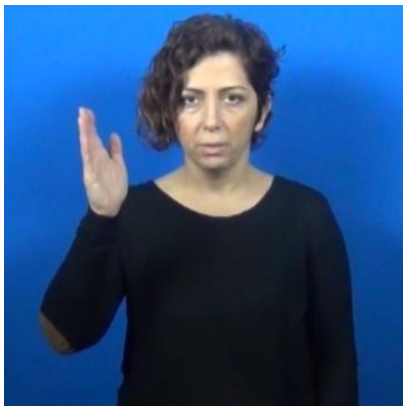
5-handshape in (108) (Kubuş, 2008). (109a) and (110a) depict the citation forms of COME and GO, respectively and (109b) and (110b) show their incorporated forms.

(108) 5-handshape:

(109) a. Citation form of COME:

b. Incorporated form of COME with entity classifier:

(110) a. Citation form of GO



b. Incorporated form of GO with classifier

As a summary, TİD applies strategies which have been observed cross-linguistically (Klima & Bellugi, 1979; Pfau et al., 2013; Rathmann, 2005) to express the distribution and iteration of the events. Additionally, handedness of the signs change according to the kind of event plurality: many events with a single individual as an argument or many events with different individuals as arguments. Another observation is the incorporation of the entity classifier with the movement of the sign. The findings summarized in this section will serve as a test in order to understand the functions of BİT and 'bn', which will be discussed in more detail in Chapter 6.

Before moving on to the discussion of BİT and 'bn' in the following section, I present an overview of manual aspectual markers observed in TİD.

5.2.2 Manual Aspect Markers

Scanning the TİDBİL database (TÜBİTAK #111K314) has shown that TİD has manual aspect or discourse markers such as BİT 'finish', SON 'end', TAMAM 'done, complete, ready', HAZIR 'ready' or MÜSAİT 'available, ready'. Zeshan (2003) points out that TAMAM 'done, complete, ready' and BİTTİ 'finish(ed)' can be discourse or aspect markers, however, 'the functions of these signs are not clear' (p. 50). Dikyuva (2011) mentions that 'EVERYDAY/ALWAYS and END are other aspectual markers in TİD' (p. 25). I am not sure whether the sign I gloss as SON 'end' is the same sign he glosses as END.

The following examples are from the data collected during the project TİDBİL (TÜBİTAK #111K314) conducted at Boğaziçi University. The functions given here are not more than suggestions since a detailed analysis has not been carried out due to time restrictions. One needs more evidence to propose these

functions. However, the pairs in the examples are presented to show that these signs have different uses. In (111a) END functions as the predicate. However, I would like to argue that END in (111b) is not predicative but functions as an aspectual marker. If it were predicative then this sentence would mean "I brushed my teeth (but) cleanliness is ended". That is, the second clause should cancel the implicature of the first clause, which is that teeth are brushed and they are clean. However, it is not the case. I tentatively suggest that END occurs with resultative sentences by highlighting the resultant state.

(111) a.

MEAL *END*

"The meal is over." Lexical & Predicative

b.

TEETH BRUSH CLEAN *END*

"(I) brushed (my) teeth clean." Functional &Non-predicative

(112) illustrates another sign which may be used as a manual aspectual marker TAMAM 'already, done' (henceforth, DONE) as well as a lexical sign.

DONE in (112a) does not have an aspectual function. It is signed to show that the signer understood the instructions, namely she gives feedback to the addressee. In contrast, in (112b) the sentence does not end with DONE and the signer introduces another event after DONE while giving instructions. She sequences the events via DONE. I suggest that here DONE is used as an aspectual marker. One could raise the question whether (112b) involves three sentences; 'You understand', 'Is it okay?' and 'Start', yet the sign DONE does not have any question nonmanuals over it.

(112) a.

DONE IX READ *DONE*

"Okay, I will read." feedback

b.

UNDERSTAND *DONE* START

"When/After you understand, start." sequencing events

As for READY and AVAILABLE, both (113a) and (114a) are sentences where READY and AVAILABLE are predicates. In contrast, READY in (113b) is not the predicate, if it were, the meaning of the sentence would have been "The toilet

is ready", however, the sentence expresses that the subject used the toilet and was done with it. (114b) has AVAILABLE after the main verb HANG-AROUND and expresses that the event of 'hanging around' is completed or terminated. One can think that it sequences the events in the discourse. However, AVAILABLE in (114b) is not a marker sequencing events because LATER is signed after AVAILABLE and it orders two events HANG-AROUND and IRON.

(113) a.

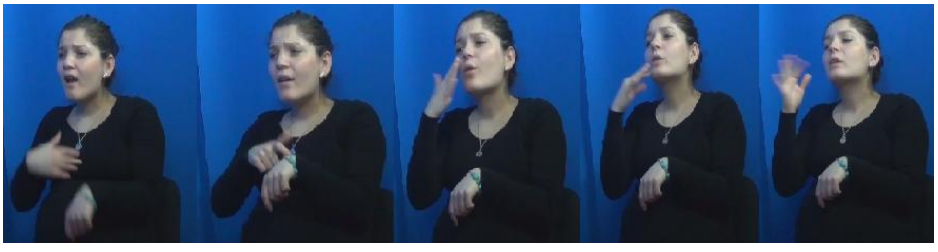
LEAF *READY*

"Grape leaf is ready (for a dish.)." Predicative

b.

TOILET *READY* METROBUS GET-ON

"(After) I used the toilet, I get on the metrobus." Aspectual

(114) a. 

IX_1 TIME NOT-EXIST *AVAILABLE* NOT

"I do not have time. I am not available." Predicative

b.

BEŞİKTAŞ DRESS HANG-AROUND *AVAILABLE*

LATER SUNDAY DRESS IRON

"I looked for a dress in Beşiktaş, I ironed the dress on Sunday."

Aspectual

As mentioned before, detailed study is required for the analysis of these signs. This study focuses on only one of the manual aspect markers in TİD, BİT 'finish' which is discussed in detail in the next chapter together with the nonmanual marker 'bn'.

CHAPTER 6

SEMANTIC-SYNTACTIC ANALYSIS OF BİT AND 'bn'

This chapter will focus on one of the manual aspectual markers, BİT 'finish', and the nonmanual marker, 'bn', which can occur with or without BİT. One of the research questions in this thesis is whether the manual marker BİT 'finish' and the nonmanual marker 'bn' express the same notion. If not, how are they distinct from each other?

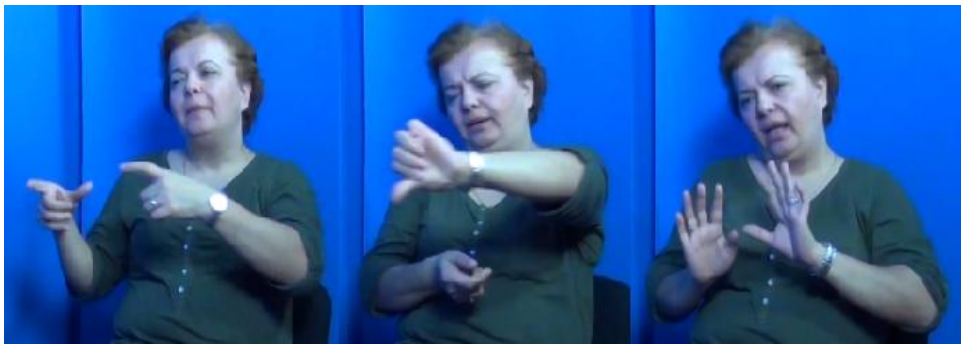
The literature has studies that mention these signs, but the studies focus on the signs separately. It has been reported that the manual marker BİT can be an aspectual marker, but that its specific function is not clear (Zeshan, 2003; p.50). As for the nonmanual marker 'bn', Kubuş and Rathman, (2009) propose that it denotes past and telic meaning while Dikyuva (2011) regards it as a completive marker. Taking these views into consideration and the co-occurence of the manual sign BİT 'finish' and the nonmanual sign 'bn', the first question to be answered is whether they express tense or not.

First, I briefly present the different functions of BİT 'finish' which has been grammaticalized from the lexical verb FINISH. This sign can be mainly used as either a lexical sign or a functional sign. As a lexical sign, it can be a main verb, 'to finish' or a discourse marker as seen in (115a) and (115b). As a functional sign, it can be seen as a marker sequencing events or an aspectual marker as in (115c) and (115d).

(115) a.

PURPLE PUT *BİT*

"You put the purple (brick), (the play) finishes." main verb

b. 

CL-TRAY POUR *BİT*

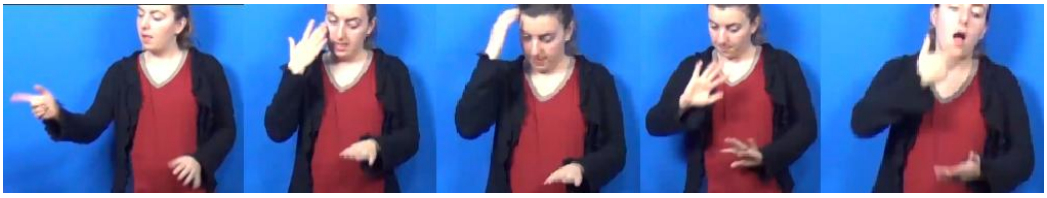
"Pour (it) and it is done." discourse marker

c.

TURKISH COFFEE DRINK *BİT*

"I (have) drank Turkish coffee." aspect marker

d.



IX_2 WATCH MEMORIZE *BİT* $_2TELL_3$

"Watch (it), memorize, then tell (it)." sequencing events

This chapter focuses on the functions of BİT as an aspectual marker. However, before presenting the discussion, I briefly provide its phonological and morphological description. In phonological terms, BİT 'finish' is a manual sign which has a flat handshape according to Kubuş's (2008) inventory of handshapes in TİD. It is grammaticalized from a two-handed sign BİTMEK 'to finish' and may preserve its original form as seen in Figure 16a. It is frequently observed that BİT 'finish' is signed only with the dominant hand as in Figure 16b, but it also observed to be signed with the non-dominant hand as in Figure 17.

a. BİT with both hands b. BİT with only the dominant hand

Figure 16. BİT with both hands and with only the dominant hand

DH: LEARN

NDH: IX_a BİT

"(You) (has) learned."

Figure 17. BİT with the non-dominant hand

The sign in these figures is different from the sign in Figure 8 which Zeshan (2003) reported to be an aspectual marker. In the discussions with the consultants and Okan Kubuş (p.c.) the sign in Figure 8 repeated here below as Figure 18 is rather considered to behave like a discourse marker and means something like ‘all came to an end’ for the mentioned discourse. Thereby, the sign which Zeshan (2003) presents, actually signals a change in the discourse, which is expected to be followed by the introduction of a new topic.

BİTTİ

Figure 18. BİTTİ sign in Zeshan (2003, p. 51)

The contrast between (116a) and (116b) shows that the aspectual marker BİT occurs only with verbs, not with nominal predicates. (116a) shows that it is

compatible with the verbal predicate GREEN BE while it is not with the nominal predicate GREEN in (116b).

(116) a. CHAMELEON GREEN BE BİT

"The chameleon became green. "

b. *CHAMELEON GREEN BİT

"The chameleon became green."

As for its morphological status, the assimilation of the place of articulation may be a proof that it is bound. The lexical verb BİT is signed in the neutral space in front of the torso; however, the aspectual marker BİT can directly attach to the main verb and assimilate to its place of articulation. For instance, If BİT 'finish' occurs after GO, it can be immediately signed where GO finishes as seen in Figure 19.

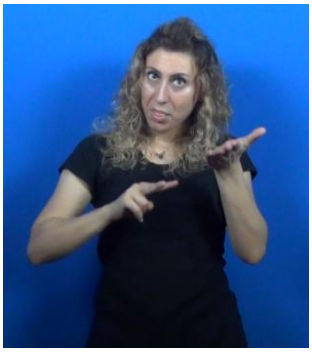
GO *BİT*

"You went to (there)./ You has gone to (there)."

Figure 19. The assimilation of the place of BİT with the place of GO

The aspectual marker BİT can co-occur with the nonmanual sign which is named as 'bn' in Dikyuva (2011) and as 'pt' in Kubuş & Rathmann (2009), I will follow Dikyuva (2011) and call it 'bn'. As seen in Figure 20, the sign is articulated with protruding tongue and does not spread over the entire phrase or the utterance -

rather, it occurs at the end of the utterance and some signers even produce it after their utterances end, in a sense, at the hold after they sign the verb.



_____bn

READ

Figure 20. The nonmanual marker 'bn'

Both Dikyuva (2011) and Kubuş & Rathmann (2009) point out that ‘bn’ can even appear in isolation, for instance, as an answer to a question, without being accompanied by any manual sign. This situation is also observed during data elicitation sessions. This is an interesting example bearing many questions for ellipsis, yet this topic is left to further studies.

Dikyuva (2011)[22] suggests that the nonmanual marker 'bn' conveys perfective, and especially completive, meaning. He mainly focuses on the marker’s compatibility with different lexical aspectual categories; such as activity, accomplishment and state-verbs[23]. Dikyuva observes that 'bn' is compatible with verbs from some lexical aspect categories, and that it does not even behave uniformly with verbs from a single category. The verbs which are compatible with

[22] Dikyuva’s thesis (2011) sheds light on the distinction of three mouth gestures; he analyses 'bn' as a completive marker, 'ee' as an inceptive marker and 'lele' as a continuative marker. Inceptive and continuative markers are beyond the scope of this study. The reader can refer to Dikyuva (2011) for further information.

[23] Dikyuva (2011) classifies the categories as action-verbs, process-verbs and state-verbs in his study. However, following Smith (1997) I will refer to them as activities, accomplishments and states, respectively, in order to be consistent throughout the thesis.

'bn' are reported to be the ones that have a clear beginning and an end. Following this observation, he argues that the nonmanual is a completive marker. On the other hand, Kubuş & Rathmann (2009) hold a different view and arrive at the conclusion that the nonmanual marker ‘bn’ conveys telic and past meaning after analyzing the potential functions of this marker and eliminating the options for it signaling perfective or perfect. They arrive at their conclusion by analyzing the compatibility of the nonmanual marker with various time adverbials and, specifically, with past tense adverbs. These distinct results inevitably raise the question whether the nonmanual marker 'bn' creates a morphologically stem root, which allows the inflected form to occur in the contexts that provide the targeted semantic environments for perfect, past or perfective. In short, the question is whether it is the grammaticalized form 'bn' or the context, which derives the desired meaning. I aim to shed light on this issue in the discussion section.

To sum up, the literature contains different levels of information regarding both aspectual markers, BİT and ‘bn’. For the former, the information found in the literature is not far beyond merely mentioning its existence and its potential functions. For the latter marker, there exist various analyses and hence the nature of ‘bn’ remains a controversial issue in the literature. In the following section, I will report the findings of the current study regarding the manual marker BİT, and the nonmanual marker 'bn'. I have already mentioned that these signs can occur either simultaneously or on their own. In this respect, the question at the center of this study is whether these two signs express the same concept. In the next sections, I will first present the findings pointing out to the properties shared by these two markers and I will then move on to the findings indicating their distinctness.

6.1 Semantic relations of BİT and 'bn'

This section presents the tests to answer the research questions:

1. Are BİT and 'bn' different realizations of the same semantic notion like *ne pas* in French?

2. If not, how do they differ in terms of their functions?

Considering these questions, one hypothesis can be that 'bn' is the mouthing of BİT and both express the same semantic notion to be determined; tense or aspect. However, I would like to argue against this and show that they in fact have distinct functions despite certain shared properties. The following subsections first present the properties shared by both BİT and 'bn', then show how they differ from each other.

6.1.1 Incompatibility with imperfective verb forms

TİD has several strategies to convey imperfective meaning. Perfective meaning can be achieved by the accentuated movement while imperfective interpretation can be conveyed through longer path movements or repetition of the verb (Gökgöz, 2009; Kubuş, 2008; Zeshan, 2003). Furthermore, Dikyuva (2011) proposes that the mouth gesture 'lele' as seen in Figure 21 functions as a continuative

marker. Figure 21 illustrates PLAY marked with 'lele'.

_____lele

PLAY

"The child is playing."

Figure 21. The nonmanual marker 'lele' as the continuative marker

If either or both of the signs BİT and 'bn' were past tense markers (and not perfective markers), they would be compatible with imperfective markers, expressing imperfective past meaning. Thus, I designed tasks to test this compatibility. I observed that imperfective forms are incompatible with BİT and ‘bn’. My consultants judged the sentences in (117)-(119) to be unacceptable and, when I asked them to correct them, they preferred to sign the sentence by using the perfective form of the verb with BİT and ‘bn’. Hence, it can be concluded that these two markers are not simply past tense markers but strictly require perfective forms.

___bn

(117) *CHILD TWO^HOUR PLAY.IMPF[24] BİT

Intended: ‘The child has been playing for two hours./The child was playing for the last two hours.’

_____bn

(118) *CHILD TWO^HOUR PLAY.IMPF

Intended: ‘The child has been playing for two hours. / The child was playing for the last two hours.’

(119) *CHILD TWO^HOUR PLAY.IMPF BİT

Intended: ‘The child has been playing for two hours. / The child was playing for the last two hours.’

(117) contains both BİT and 'bn' while (118) has only 'bn' over the verb and (119) only has BİT after the verb. The imperfective form of the verb PLAY can be signed in different ways. It can either be accompanied by the nonmanual marker in Figure 21 or by a longer path movement. Both of these possible ways of expressing imperfectivity were tested with each sentence. The incompatibility with the former strategy can be considered as an incompatibility between ‘bn’ and the nonmanual marker, which expresses imperfectivity. However, this does not explain the ungrammaticality of sentence (119) containing only the manual marker BİT. Furthermore, if these markers were simply functioning as tense markers, one would also expect that when the second imperfective strategy is employed, i.e. when the verb is signed with longer path movement, there would be no restrictions for 'bn' or BİT to occur at the end of the predicate. However, as the sentences (117)-(119) show, none of the imperfective forms is compatible with either BİT or 'bn'. Hence, it

[24] I will gloss the imperfective forms as VERB.IMPF to be consistent. However, all the possible strategies to mark imperfectivity mentioned in this section were tested.

can be concluded that these markers strictly require perfective verb forms and hence are not to be considered as past tense markers.

6.1.2 Incompatibility with Sentential Negation

As shown in Section 3.1.2.3, in a number of sign languages the manual aspectual markers that one grammaticalized from verbs FINISH or DONE are not compatible with regular sentential negation but require a different negative marker. The same is observed with BİT and 'bn' in TİD. Signers of TİD whom I consulted stated that sentential negation is acceptable neither with BİT nor with 'bn', as demonstrated in the following sentences:

___bn

(120) * IX-1 EAT^NOT BİT

Intended: ‘I have not eaten anything. / I did not eat anything.’

_____bn

(121) *IX-1 EAT^NOT

Intended: ‘I have not eaten anything. / I did not eat anything.’

In the sign languages where a special negative marker is attested, this marker is a manual marker. My research revealed that, in contrast to LIS, ISL,LIM and ASL, TİD has a nonmanual sign 'ap'. This nonmanual marker is also reported in Zeshan as shown in Figure 22, yet she considers it as a gestural sign rather than having a specific function.

Figure 22. 'ap' in Zeshan (2003, p. 59)

The negative nonmanual marker is signed with puffed cheeks where either only one of the cheeks or both of them puffed. This nonmanual marker is signed at the end of the utterance accompanied by a hold. In other words, the whole sentence can be signed first, which is then followed by the negative nonmanual sign Figure 23 shows the verb ALMAK 'to take' and Figure 24 demonstrates that the signer ends the sign ALMAK ‘to take’ and then he puffs his cheeks.

‘I took / I have taken’

Figure 23. ALMAK ‘to take’

‘I did not take/I have not taken.’

Figure 24. ALMAK ‘to take’ with puffed cheeks accompanied by hold

Dikyuva et al (2015) reported that the nonmanual marker 'ap' is the negative counterpart of 'bn' while BİT has another manual negative counterpart HİÇ 'ever’. The discussion on HİÇ is presented in Appendix C in order not to deviate from the main focus. The question whether 'ap' is the negative counterpart of 'bn' or BİT will be addressed in Section 6.1.8.

Zucchi et al. (2010) offers an explanation for the incompatibility of perfective structures and sentential negation in LIS. As mentioned before for the examples in (73) repeated below in (122) and (123), Zucchi et al. (2010) point out that the two negative signs NON-ANCORA and NIENTE have additional presuppositional functions. In particular, NON-ANCORA not only negates the perfective sentence but also adds the presupposition that the negated event was expected to take place. On the other hand, NIENTE denotes that the event did not and will not take place.

(122) GIANNI DO-HOMEWORK NON-ANCORA

‘Gianni has not done his homework yet.’

(123) GIANNI DO-HOMEWORK NIENTE

‘Gianni has not done his homework (and won’t do it).’

(124) GIANNI HOUSE BUY NON

"Gianni has not bought a house."

As a summary, Zucchi et al. (2010) proposed that the necessity of a different negative sign instead of sentential negation is due to the additional presuppositions. Based on the discussion above, Zucchi et al. (2010)'s analysis of negative perfective markers does not seem to hold for TİD. This is because, the nonmanual marker in Figure 24, 'ap' does not occur with a particular presupposition. However, in his paper on negation in spoken languages, Higginbotham (2009) argues that negative events actually express the non-existence of the events rather than negating an existing and completed event. Following his discussion, it is not so surprising that languages tend to grammaticalize the non-existence of a perfective event.[25], which will be addressed again in Chapter 6.

6.1.3 Compatibility with different tense references

The studies in the literature have reported that tense information in TİD is encoded either nonmanually (Gökgöz, 2009) or via time adverbials (Arık, 2012; Zeshan, 2002, 2003), just like other sign languages mentioned so far. Recall the discussion in Section 5.1.1 that Gökgöz (2009) argues that head movement conveys tense information. He also notes that single head nod gives past tense meaning, while repetitive head nods indicate that the event will take place in the future. However, The section 5.1.1 has shown that the nonmanual marking for tense information cannot be compatible with all the verbs due to their phonological realizations. Furthermore, the events marked with these nonmanuals are not systematically interpreted with the proposed tense. Due to these reasons, I will present data containing different time adverbials.

[25] In a similar manner, sentential negation is also incompatible with existential predicates. TİD has another manual sign for the negative existential. Hence, in terms of negation, the behavior of perfectives parallels the behavior of existential structures.

This section will firstly show that BİT and 'bn' are both compatible with past time adverbials while they start to behave differently in the contexts which refer to future although both are incompatible with future time adverbials. The reason for this divergence will be provided in the following sections. Among adverbs that are compatible with both BİT and 'bn', we can consider time adverbials such as YESTERDAY, TWO DAYS AGO, A^WEEK AGO, NOW, and TODAY. The examples in (125) show that the adverb YESTERDAY not only is still compatible with both markers, but it also neutralizes any potential distinction in analyzing the structures with BİT and 'bn'.

___bn

(125a) YESTERDAY WORK BİT

'I worked yesterday.'

_____bn

b. YESTERDAY WORK

'I worked yesterday.'

The parallel behavior of BİT and 'bn' is also observed with future time adverbials, yet in a reverse way; both signs are incompatible with future time adverbials. My consultants judged all of the sentences in (126)-(128) to be ungrammatical. Hence, these examples indicate that the future time adverbial TOMORROW is incompatible with either marker, regardless of them occurring alone, as in (126) and (127), or together, as in (128). The potential reasons for this incompatibility will be discussed in Chapter 6.

_____bn

(126) *TOMORROW IX_1 STUDY

Intended: 'I will have studied by tomorrow. / I will study tomorrow.'

___bn

(127) *TOMORROW IX_1 STUDY BİT

Intended: ‘I will have studied by tomorrow. / I will study tomorrow.’

(128) *TOMORROW IX_1 STUDY BİT.

Intended: ‘I will have studied by tomorrow. / I will study tomorrow.’

When I tested BİT and ‘bn’ in contexts referring to future but without an overt future time adverbial, the judgments changed. While the manual sign BİT can occur in contexts expressing future, the nonmanual ‘bn’ cannot. In order to test this compatibility, the consultants were given a situation like the following: "You invite one of your friends to the cinema tomorrow. However, your friend says that she or he has to study tomorrow. Then you make another suggestion and say that you can go to the cinema after she or he finishes her or his study. You ask him or her to call you when he or she finishes studying.” In this context, my consultants accepted sentence (129), which only has BİT, yet they judged the sentence (130), which has 'bn', to be ungrammatical.

(129) STUDY BİT $_2$LET^KNOW$_1$

‘After you study let me know./ When you finish studying let me know.’

STUDY BİT $_2$LET^KNOW$_3$

Figure 25. ‘After/ When you study (finish studying) let me know.’

_____bn

(130) *STUDY $_2$LET^KNOW$_1$

Intended meaning: ‘After you study let me know./ When you finish studying let me know.’

Given that in TİD tense is not necessarily encoded on the verb or in every sentence, it is not so surprising that BİT[26] requires events to be ordered chronologically. Although my consultants did not accept BİT with an overt future time adverbial, it is acceptable in contexts with future reference. This may be due to the possibility that BİT has been grammaticalized from a lexical verb BİTMEK ‘to finish’. Hence, the manual marker may still carry its core meaning and be in the process of grammaticalization (Pfau & Steinbach 2011). Due to this, in their judgments, the consultants may be affected from the semantic clash between unrealized events in the future and the denotation of BİT ‘finish’.

6.1.4 Compatibility with different lexical aspects

The markers BİT and ‘bn’ can occur with a verb phrase as long as it is compatible with the lexical semantics of the verb. In this study, I will follow the five-way distinction of Smith (1997) regarding the semantic classes of verbs: states, activities, accomplishments, achievements and semelfactives. Consecutively, I will discuss

[26] Another observation is that BİT preserves its requirement for a perfective verb form, as seen below. The sentence becomes ungrammatical when the imperfective form of the verb is signed instead, as in (i).

(i) * STUDY.IMPF BİT $_2$LET^KNOW$_1$

Intended meaning: ‘After you study let me know./ When you finish studying let me know.’

with which semantic types of verbs the viewpoint morphemes BİT and 'bn' are allowed to co-occur. The discussion in this section aims to show that the presupposition that aspect is lexical and related to only the verb is not sufficient to present a satisfying explanation for the compatibility of BİT and 'bn' with different kinds of verbs. After presenting this, I will return to this issue while providing the syntactic analysis and assume that these types; state, activity, accomplishment, achievement, and semelfactive are related to events rather than verbs.

6.1.4.1 The lexical aspectual categories that BİT and 'bn' co-occurs with

First of all, it can be observed that both signs are incompatible with state-verbs: both individual and stage-level. If we assume BİT and 'bn' to be grammaticalized expressions of perfectivity, this incompatibility is expected. By nature, perfective puts boundaries to an event and denotes that the event has culminated and has reached its endpoint. On the other hand, states always denote an open process, which means that they do not have an endpoint. Hypothetically, the external arguments of state-verbs undergo a process without a break and they do not have volition to change their states (Comrie, 1979; Rothstein, 2004; Smith, 1990). The sentences in (131) - (133) contain a state-verb, STAND and it has been tested with BİT, 'bn' and with both. STAND does not culminate and approximate an endpoint. The ungrammaticality of these sentences (131, 132, 133) shows that BİT and ‘bn’ require an endpoint in the event, namely a telic event.

(131) *BOTTLE TABLE$_a$ IX$_a$ STAND BİT A^WEEK

Intended meaning: ‘The bottle has stood on the table for a week.’

___bn

(132) *BOTTLE $TABLE_a$ IX_a STAND BİT A^WEEK

Intended meaning: ‘The bottle has stood on the table for a week.’

_____bn

(133) *BOTTLE $TABLE_a$ IX_a STAND A^WEEK

Intended meaning: ‘The bottle has stood on the table for a week.’

Next, both signs are compatible with accomplishment-verbs like BUILD HOUSE or PAINT PICTURE and perfective denotes that an accomplishment reached its endpoint, as demonstrated in (134) and (135).

(134) a. IX_1 PICTURE MAKE BİT

'I (have) painted the picture.'

_____bn

b. IX_1 PICTURE MAKE

'I (have) painted the picture.'

(135) a. IX_1 HOUSE MAKE BİT

'I (have) built the house.'

_____bn

b. IX_1 HOUSE MAKE

'I (have) built the house.'

The following subsection presents the lexical aspectual categories with which BİT and 'bn' behave differently and show different patterns.

6.1.4.2 Difference between BİT and ‘bn’

The point where two signs BİT and 'bn' start to diverge is the achievement verbs. The manual sign BİT is incompatible with all the achievement-verbs such as

UNDERSTAND or DIE. Achievement-verbs denote a change of state and encode instantaneous events. In other words, they denote a transition from a non-phi situation to a phi situation. Like state-verbs, the external argument of achievement-verbs is the experiencer (or theme) lacking volition over the event. The example in (136) has an achievement verb, UNDERSTAND which actually expresses the endpoint or change of state from non-understanding to understanding. Thus, this example emphasizes that even though achievements are telic BİT requires the events not only to be telic but also to have stages in order to co-occur with them.

(136) *IX_1 UNDERSTAND BİT

'I have understood. / I understood.'

Moving on to the compatibility of 'bn' with achievement verbs, we observe that it can occur with some of the achievement verbs while it yields ungrammaticality with others. The examples in (137) have achievement verbs UNDERSTAND, DIE which the nonmanual marker is incompatible with while the examples in (138) have FALL and SELL which the nonmanual marker is grammatical with. The verbs UNDERSTAND and DIE are unergative, on the other hand, the verb FALL is unaccusative while the verb SELL is transitive. To summarize, the nonmanual marker 'bn' yields ungrammaticality with unergative achievement verbs while it is grammatical with other achievement verbs. This difference will be discussed while presenting the syntactic analysis.

_____bn

(137) *IX_1 UNDERSTAND

"I have understood. / I understood."

_____bn

(138) a. GLASS FALL

"The glass has fallen."

_____bn

b. IX-PL_3 HOUSE SELL

"They (have) sold the house."

When we look at sentences with activity-verbs, there is a clear distinction between BİT and ‘bn’: While 'bn' can occur in any such context and is compatible with all activities, BİT has a more restricted distribution. In particular, while it is incompatible with activity-verbs such as SWING, RUN or BEAT, it cannot co-occur with achievement verbs such as WASH, SLICE and READ. This contrast is demonstrated in the examples (139)-(141).

(139) a. IX_1 BABY WASH BİT

"I (have) washed the baby."

_____bn

b. IX_1 BABY WASH

"I (have) washed the baby."

(140) a. IX_3 BREAD SLICE BİT

"S/he (has) cut the bread."

_____bn

b. IX_3 BREAD SLICE

"S/he (has) cut the bread."

(141) a. *IX_1 BABY SWING BİT.

Intended: "I (has) swung the baby."

_____bn

b. IX_1 BABY SWING

"I (have) swung the baby."

This distinction between BİT and 'bn' shows that 'bn' is compatible with termination while BİT requires an event to complete, which will be addressed in the following section.

6.1.5 Compatibility with termination vs. completion

Another point not directly related to lexical semantic categories but is relevant to the discussion above is the compatibility of BİT and 'bn' with structures expressing some kind of termination. There is a general consensus on the view that perfective with atelic predicates conveys termination, while with telic predicates it expresses completion. Hence, if we would consider all activity-verbs to be atelic, and the markers BİT and ‘bn’ in TİD to function as perfective markers, we would expect them to freely co-occur and to express the termination of the activity in question. In order to test this prediction, I asked my consultants whether the sentences in (142) and (143) can be uttered in the following context: "Suppose you have a friend who regularly does sports and reads. You tell me about his or her day at the end of that day". They only accepted the sentences (142b) and (143b), both of which contain the nonmanual marker 'bn'. They pointed out that the sentence (143a) is acceptable only in a situation where Can finishes reading the book, while (142a), due to the lack of an endpoint, is unacceptable in all contexts. Hence, the findings suggest that (i) even though the two verbs WALK and READ are traditionally grouped together with respect to their lexical semantics, they differ in terms of lacking vs. having an endpoint, namely activity vs. accomplishment, and (ii) ‘bn’ is acceptable in a wider

range of contexts, while ‘BİT’ is only allowed to occur in perfective structures that convey completion rather than termination.

(142) a. *C-A-N TWO^HOUR WALK BİT

"Can (has) walked for two hours."

_____bn

b. C-A-N TWO^HOUR WALK

"Can (has) walked for two hours."

(143) a. ??C-A-N BOOK READ HALF HOUR BİT

"Can (has) read a book for half an hour."

____bn

b. C-A-N BOOK READ HALF HOUR

"Can (has) read a book for half an hour."

These grammaticality judgments support the conclusion I have arrived following the previous discussion, namely that some activity-verbs, like READ or WASH, have an endpoint while others, like WALK or RUN, express open processes. Moreover, they also indicate that BİT and ‘bn’ are fundamentally different.

6.1.6 Compatibility with distribution and iteration

A similar distinction occurs in the contexts of iteration. The manual and nonmanual signs were also tested with the findings in Section 5.2.2. As the examples in (144) and (145) illustrate, the nonmanual 'bn' occurs with the verbs inflected with distributive or iterative morpheme while BİT yields ungrammatical sentences.

____bn ____bn ____bn

(144) a. YESTERDAY PAPER CUT CUT CUT

"I cut papers yesterday."

b. *YESTERDAY PAPER CUT BİT CUT BİT CUT BİT

"I cut papers yesterday."

(145) a. _____bn _____bn

IX_1 BEFORE FLY FLY

"I have flown many times to different places."

b. * IX_1 BEFORE FLY BİT FLY BİT

"I have flown many times to different places."

To sum up, this section shows that both markers are incompatible with state verbs, while they are compatible with accomplishments. The distinction between the two markers BİT and 'bn' becomes clear when they are tested with activity-verbs, achievement verbs and in contexts expressing termination and iteration. 'bn' was observed to be compatible with all the activity-verbs. However, BİT occurs with a restricted set of activity-verbs, namely only with those, which have an implicit endpoint, i.e. which can be interpreted as accomplishment. Regarding this distinction, I propose that BİT is a completive marker and encodes that a telic event which has stages has reached its endpoint, while 'bn', in a more general way, encodes that the event is perfective, expressing either completion or termination.

6.1.7 Revisiting negation

The distinction between the manual and nonmanual marker in terms of time reference helps capture which one's negative counterpart the nonmanual marker 'ap'

is. As a diagnostic, I presented sentences with 'ap' within future contexts and the consultants did not accept 'ap' either in these contexts or with future time adverbials as seen in (147).

_____ap

(146) *STUDY $_2$LET^KNOW$_3$

Intended meaning: ‘If you do not finish studying let me know.’

This distinction supports Dikyuva et al.'s (2015) claim that 'ap' is the negative counterpart of 'bn'.

6.2 Perfect meanings which 'bn' expresses

The findings in this subsection are discussed only for the nonmanual marker 'bn', since it has a wider distribution and can occur in contexts expressing both completion and termination. The sentences in this section become ungrammatical when signed with BİT.

In general, perfect is assumed to indicate that an event took place or will take place before a reference time, either - at least - once (*existential perfect*) or throughout a time span (*universal perfect*) (Bhatt & Pancheva, 2005; Iatridou et al., 2001; Reichenbach, 1947). In terms of Iatridou et al.’s (2001) analysis, the sentences with 'bn' can only be considered as expressing existential perfect.

___bn

(147) IX$_3$ ANKARA GO

‘She has gone to Ankara.’

The sentence in (147) is ambiguous: the sentence may state (i) that she (Zeynep) went to Ankara at least once in her life or (ii) that she went to Ankara and has not return to Istanbul, i.e. that she is still in Ankara. The consultants accepted the

sentence in both contexts. The sentence in (148), however, is only acceptable in the context where the speaker has been to Europe at least once; the presence of the past time adverbial IN THE PAST excludes the possibility for the second interpretation, namely that the speaker is still in Europe:

___bn

(148) IX_1 IN THE PAST EUROPE GO

'I have been to Europe before/long ago.'

These examples depict existential perfect (E-perfect) and a bounded event. In order to derive a universal perfect (U-perfect) reading and a unbounded event, imperfective forms, nominal predicates or state-verbs are required as discussed in Section 2.3. Yet we know that the nonmanual marker 'bn' is incompatible with imperfective verb forms. Another crucial point for U-perfect is that it can be formed with time adverbials like *for*. Iatridou et al. (2001) highlight that in order for a present perfect form to be interpreted as U-perfect, the event described by the verb, which is marked with perfect, must be unbounded and hence it is to be interpreted as continuing at the time of utterance. They argue that the second part of the sentence in (149) is incompatible with the U-perfect reading of the first clause, hence, the unacceptability. (Iatridou et al., 2001: 158-159).

(149) *She has always lived here but she doesn't anymore.

Independent of how the U-perfect is formed, i.e. whether through an adverbial, an imperfective marker, or a state-verb, the crucial point is that the event must be unbounded. The TİD version of sentence (149) was asked to the consultants in order to test the compatibility of U-perfect with the nonmanual marker 'bn'. I observed that, even if not explicitly uttered, the addressee interprets the sentence in (150) as the event having come to an end. Stated more clearly, the sentence expresses

that there was a period of time in which Zeynep lived in Istanbul yet she no longer does. Hence, only E-perfect interpretation is available in this sentence.

____bn ____ht

(150) ZEYNEP FIVE^YEAR ISTANBUL LIVE (IX_3 NOW LIVE NOT)

'Zeynep has lived in Istanbul for five years and she does not now.'

The compatibility with time adverbials such as YESTERDAY or TWO^WEEKS AGO and the occurrence with the structures giving perfect meaning supports my initial claim that past or perfect meaning is derived from the combination of adverbials and 'bn', or from the context rather than the nonmanual marker itself.

6.3 Interim summary

The tests that I have applied for both signs BİT and 'bn' shows that these two signs have different functions. Briefly, BİT occurs with events which have stages and express an endpoint, namely accomplishments. It requires both a change of the state and its subject to be an agent. On the other hand, 'bn' occurs with accomplishments, activities, and some of the achievements, as seen in Table 6. Moreover, BİT occurs in the contexts yielding completion while 'bn' occurs in the contexts yielding both completion and termination.

Table 6. Compatibility patterns of BİT and 'bn' with lexical semantic categories

	State	Activity	Accomplishment	Achievement	Completion	Termination
BİT	-	-	+	-	+	-
'bn'	-	+	+	+ (some)	+	+

6.4 Aspectual marker BİT vs. lexical verb BİT

The properties of BİT summarized in the previous section resemble the properties of the lexical sign 'to finish' which takes embedded clause. This situation creates a challenge for a sentence like (151) because it in principle have the interpretations in (i) and (ii). When the sentence is interpreted as in (i), we can assume that BİT functions as an aspectual marker whereas when it is interpreted as in (ii) we can assume that BİT functions as the main verb in a complex sentence taking PRESENT as its complement.

(151) PRESENT BİT[27]

(i) She (has) presented.

(ii) She finished presenting.

Although (151) seems to be potentially ambiguous, Section 6.1.2 has shown that aspectual BİT is incompatible with sentential negation and another sign negates the perfective sentence. On the other hand, the verb BİT can be negated with sentential negation as seen in (152).

(152) PRESENT FINISH NOT

"She did not finished talking. / She has not finished talking."

Moreover, adverbials also make a distinction between the two signs. In the embedded structures, time adverbials or manner adverbials can occur between the matrix verb BİT and the embedded verb as in (153) and the adverb modifies the matrix verb. On the other hand, adverbials cannot occur between the verb and aspectual BİT, in a sense, the latter needs to be adjacent to the verb. IMMEDIATELY in (153b) expresses how she finished the presentation while it

[27] The verb in (151) means to present something and it is an achievement verb. The internal argument was presented in the discourse and the signer did not refer to it again while discussing these sentences.

expresses how she presented (the research) in (153c) and means that she presented (the research) fast.

(153) a. WRITE YESTERDAY FINISH

"She finished writing yesterday."

b. PRESENT IMMEDIATELY FINISH

"She immediately finished talking."

c. IMMEDIATELY PRESENT BİT

"She immediately talked."

The last distinction between these two signs is the compatibility with modal verbs such as NECESSARY or OBLIGATORY. Modal verbs can occur with the verb FINISH while they are incompatible with aspectual BİT. A modal verb is used in a context such as "In a conference, you are the chair of a session and one of the presenters does not end her talk. You need to warn her because another presenter is waiting." The signer replies to this context by providing the sentence in (154a). However, she did not accept the sentence in (154b) with the intended meaning.

(154) a. TELL IMMEDIATELY FINISH NECESSARY

"You should immediately finish telling."

b. *IMMEDIATELY EAT BİT NECESSARY

Intended meaning: "You should immediately eat (perfective)."

Even though both the verb BİT and the aspectual BİT show similar properties, they have distinct compatibility patterns with adverbials, negation and modal verbs. Similarities between the two can be due to the fact that the aspectual BİT is still in the process of grammaticalization from the verb FINISH. This may make it seen as a free sign, but it needs to be adjacent to the verb. In addition to this, it has its own selectional requirements different from the verb BİT.

6.5 A tentative syntactic analysis

In this section I propose a structure for TİD based on Tenny's (2000) framework and argue that BİT and 'bn' occupy different aspectual heads in the structure. Tenny (2000) regroups Cinque's (1999) classification of functional projections by analyzing adverbs with different event types; core events, events with measure or path, and events without core events. Based on the classification in event types, she proposes the structure in Figure 26 which has two Aspect phrases (Tenny, 2000, p.326). Tenny (2000) analyzes the events which are agent-oriented and have causation as located in the upper VP while the events which denote change of state are located in the lower VP.

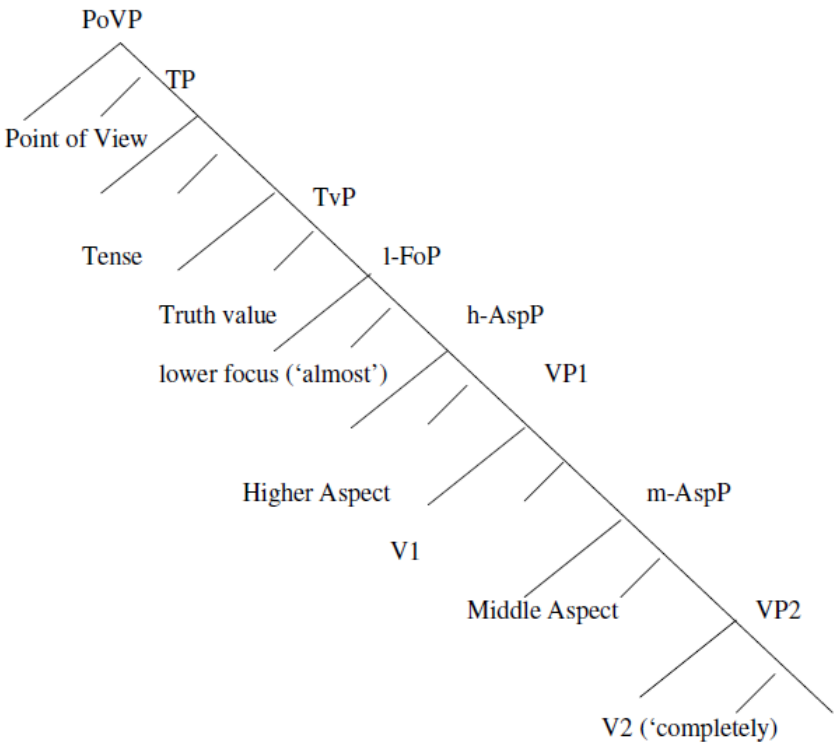


Figure 26. Semantic zones and functional projections in Tenny (2000; p. 326)

Based on the findings in the previous section, this section attempts to propose a semantic-syntactic analysis by adapting Tenny (2000). The tests in the previous section reveal that BİT and 'bn' differ in terms of the compatibility with different

time references and the lexical semantic categories. However, the lexical semantics approach cannot provide a unified analysis. In other words, BİT does not have the same compatibility with all the verbs in the activity class. In the same manner, the 'bn' is not compatible with all the verbs in the achievement class. The examples in (144)-(146) are repeated in (155). Lexical semantics approach groups the verbs WASH, SWING and SLICE as activity verbs and perfectivity is expected to be grammatical with activity verbs and yield termination meaning (Comrie, 1976; Smith, 1997). However, BİT is compatible with SLICE and WASH while it is incompatible with SWING. As seen in (155), WASH and SWING which are considered to belong to the same category have the same internal argument BABY, yet they give contrasting results with BİT.

(155) a. IX_1 BABY WASH BİT

"I (have) washed the baby."

b. *IX_1 BABY SWING BİT.

"I (have) swung the baby."

c. IX_3 BREAD SLICE BİT

"S/he (have) cut the bread."

Tenny and Pustejovsky (2000) highlights that an equivalent sentence of (155c), 'John has sliced the bread' can be considered as being composed of an inner and an outer event. The inner event is 'The bread is sliced' and the outer event is 'John acts on the slicing event' The inner event is telic and the bread undergoes a change of state. The same analysis can be considered to explain the contrast in (155a) and (155b). The predicate in (155a) WASH BABY is also composed of an inner event, 'The baby is washed' and an outer event, 'the external argument acts on the washing event' On the other hand, the predicate in (155b) SWING BABY, cannot be

decomposed as an inner and outer event. Thus, this difference shows that BİT sees only the inner event.

The sentences in (155) are compatible with 'bn' as shown in Section 6.1.4.2. From the perspective of lexical aspect, 'bn' is not compatible with all the verbs in the achievement category as seen before in (142) and (143), repeated as (156). Although all the verbs in (156), UNDERSTAND, FALL and SELL are achievement verbs, the nonmanual marker ‘bn’ does not have a consistent pattern with them.

(156) _____bn

*IX_1 UNDERSTAND

"I have understood. / I understood."

_____bn

b. IX-PL_3 HOUSE SELL

"They (have) sold the house."

_____bn

c. GLASS FALL

"The glass has fallen."

When we consider the sentences in (156a and b), the difference between two is that (156b) has an agentive external argument while (156a) has a non-agentive external argument. This contrast indicates that 'bn' requires agentivity. However, 'bn' is compatible with (156c) although the external argument is not agentive. The difference between (156a and b) and (156c) is causation. There can be an implicit natural cause or agent in (156c), in a sense an agent may initiate the event of ‘fall’. To exemplify, there may be a strong wind and causes the glass fall or a child may be running in the room, s/he hits the glass and the glass falls. These distinctions show that 'bn' requires the events to have agentivity or causation. A similar example, a

causative-inchoative pair is given in Tenny (2000) to argue that the event in (157a) is a complex event. A similar pattern is represented in (158) for TİD. The nonmanual marker ‘bn’ occurs with both structures, however, analyzing (158b) as an inchoative will be just jumping to the conclusion, and further study is necessary. The reader can refer to Özkul and Kelepir (2015) for a different analysis.

(157) a. Margot darkened the photograph.

b. The photograph darkened over time.

(158) a. _____bn

CHILD GLASS FALL

"The child has caused the glass to fall."

b. _____bn

GLASS FALL

"The glass has fallen."

Another empirical evidence depicting that ‘bn’ is in a higher projection is its co-occurrence with the verbs inflected with distributive morpheme, that is, in quantification structures described in Section 5.2.1. Sentences in (147) and (148) repeated as (159) and (160) have ‘bn’ over all the verbs and it is repeated with each sign rather than spreading over them. The same sentences in (159) with BİT are ungrammatical, as we see in (147b) and (144b) repeated as (159b) and (160b). Tenny (2000) points out that the core event is opaque for quantification and the quantification is only available at the highest ‘event level’ (p. 328). She argues that a single causing event cannot result in many different core events. To illustrate, the event in (159b) has multiple events of flying and each event contains the external argument. In other words, it is not the case that the agent initiated a single ‘flying’ event and ended with many ‘flying’ events.

(159) a. ____bn ____bn ____bn

YESTERDAY PAPER CUT CUT CUT

"I cut papers yesterday."

b. *YESTERDAY PAPER CUT BİT CUT BİT CUT BİT

Intended: "I cut papers yesterday."

____bn ____bn

(160) a. IX_1 BEFORE FLY FLY

"I have flown many times to different places."

b. IX_1 BEFORE FLY BİT FLY BİT

"I have flown many times to different places."

As a summary, the compatibility of BİT with verbs of consumption such as EAT and creation such as BUILD or PAINT which denote a change of state shows that it agrees with the predicates which have a core event. Moreover, the ungrammaticality with quantification also supports the proposal that BİT occupies a lower Asp head. As for ‘bn’, it occurs with the events requiring an agentive external argument and quantification takes scope over the events denoted by the verb phrases which are inflected with ‘bn’. These findings support that ‘bn’ occupies a higher Asp head.

By adopting Tenny’s (2000) analysis, I propose that BİT is in the head of the lower AspP and ‘bn’ is in the head of the higher AspP and each verb phrase is dominated by a different AspP. As seen in the tree in Figure 27, the nonmanual marker 'bn' stands in the head of the outer aspect (or higher aspect) and occurs with the events by not looking into the internal structure of the events, which is clearly seen by the quantification over it. On the other hand, BİT stands in the head of the inner aspect (or lower aspect) and occurs with the events which have stages and the

end state. This argumentation is supported by empirical data where BİT is only compatible with the events encoding change of state and requiring process.

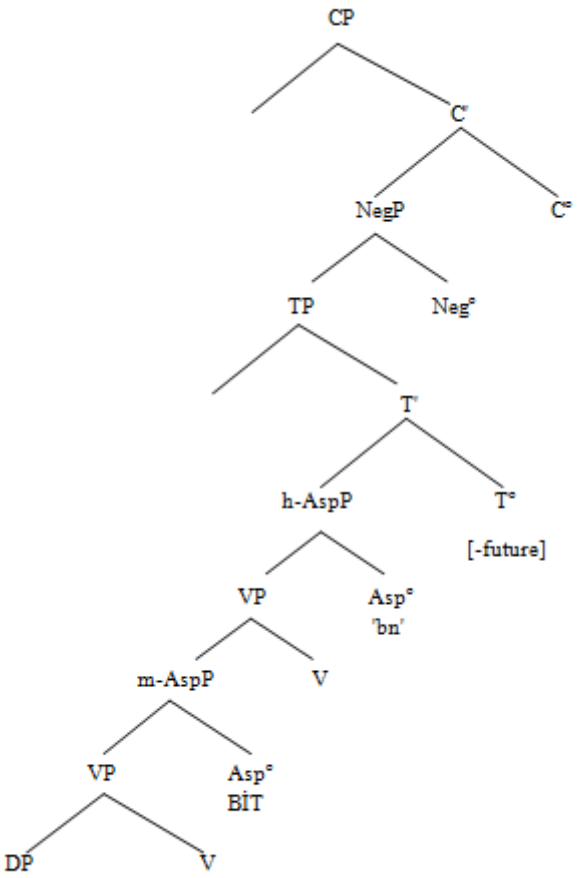


Figure 27. The proposed syntactic structure in TİD[28]

This chapter has presented how BİT and 'bn' are distinct from each other by testing them with time adverbials, aspectual categories: state, activity, accomplishment and achievement, with contexts conveying termination and iteration, and with contexts conveying perfect meaning. All of these features are part of the lexical definitions of the signs BİT and 'bn'. These features come from the lexicon into the composition.

[28] Sevinç (2006) shows that TİD has a head-final structure in her thesis.

Based on the findings, I proposed that the nonmanual marker 'bn' makes a distinction between statives and events, furthermore denotes that the events marked by 'bn' have reached their endpoint. If the aspectual category has a change of state, it yields completion meaning or if not, it yields termination meaning. Syntactically, 'bn' takes the whole event as its argument and does not look into the structure of this event. On the other hand, BİT looks into the structure of the event and it occurs with it if the event has stages and denotes a change of state. It marks the endpoint. Building upon these, I proposed that TİD has two different AspPs. By adopting from Tenny (2000), I argued that one is the higher aspect phrase corresponding to outer aspect and the other is the lower aspect phrase corresponding to inner aspect.

CHAPTER 7

DISCUSSION

This chapter attempts to present a unified discussion based on the findings which I provided in the previous chapter. Before analyzing the results, let me remind the reader of the two research questions at the heart of this study: (i) Are the manual marker BİT and the nonmanual marker 'bn' distinct markers? and (ii) If so, what are their functions? Regarding the first question, the findings clearly indicate that the two signs are distinct markers. This conclusion is derived from the following observations:

(i) BİT and ‘bn’ behave differently in contexts referring to different time spans: BİT can occur in the contexts denoting future, yet 'bn' is incompatible with these contexts.

(ii) They differ in terms of their compatibility with verbs belonging to different lexical semantic classes: Although both of them can occur with accomplishment-verbs, 'bn' is compatible with all activity-verbs, whereas BİT is restricted to a subset of those.

(iii) 'bn' can occur in contexts which entail perfect meaning and the ones where past time adverbials are present.

I have argued that both BİT and ‘bn’ should be considered as viewpoint aspectual markers rather than tense markers. Generally speaking, any event or state can co-occur with any tense, without being sensitive to lexical semantics. To illustrate, when, for instance, you talk about a friend with whom you no longer have contact, you can describe this person by using past tense, and utter a sentence like "He had blue eyes". A state can be placed in the past, however, when state

construction is tested with BİT or 'bn', it yields ungrammatical constructions. If BİT and 'bn' were tense markers, the sentences should have been grammatical.

Other than perfect, tense is cross-linguistically insensitive to viewpoint aspect, i.e. to perfective or imperfective. However, BİT and 'bn' are sensitive to these categories.

Last but not least, a tense marker is expected to carry a particular time reference and hence to be limited to occur only in constructions with the same time reference, yet BİT occurs both with past time adverbials and within future contexts. When all these findings are taken into consideration, the possibility of BİT and ‘bn’ functioning as tense markers is eliminated.

After this point, I will discuss the specific aspectual denotations of the signs separately. In the following two sections, I will present my analyses first for the manual sign BİT, and then for the nonmanual sign 'bn.

7.1 Sub-categorizational frame of BİT

The findings of the current study concerning compatibility of BİT and ‘bn’ with different lexical semantic classes of verbs suggest that the manual marker BİT seems to encode perfectivity and occurs in contexts where an event has culminated and reached its endpoint. If BİT were a general perfective marker, however, we would expect the sign to occur with all the verbs in the activity class by expressing termination of the activity in question. Examples in (145) and (146) clearly showed that it is not the case and that the sign is incompatible with termination meaning in general. Moreover, I also presented my observation that BİT is acceptable with some activity-verbs while it is incompatible with the others. Although these observations seem puzzling at first, things get clearer when the events denoted by accomplishment

verbs and activity verbs with which BİT is compatible are analyzed together: All these events have in common an approximation towards an endpoint, in other words, they are all telic events. In particular, the internal arguments of these verbs undergo a change (Erguvanlı Taylan & Öztürk, 2014; Rothstein, 2004; Smith, 1997) and this change of state is another way to describe the telicity. To argue that BİT only occurs with telic predicates denoting a change of state, however, does not seem to be a sufficient restriction, since achievement-verbs also express a change of state yet BİT is incompatible with them. Thus, I suggest that BİT is restricted to predicates denoting telic events which have stages and expresses that these events have reached their endpoints by the time of utterance.

7.2 Sub-categorizational frame of 'bn'

Compared to BİT, ‘bn’ seems to encode a more general notion, namely perfectivity. Hence, ‘bn’ occurs in contexts expressing termination and, unlike BİT, it can occur with all of the verbs in the activity class. The compatibility of ‘bn’ with perfect reading immediately raises the question whether this marker can as well be considered as a perfect marker which occurs only with perfective forms, in parallel to perfect constructions in some other languages like Greek (Comrie, 1976; Iatridou, Anagnostopoulou, & Izvorski, 2001) and ASL (Duffy, 2007; Rathmann, 2005). If we analyze perfect semantically, rather than as a special construction, we can say that it denotes that an event has occurred before a reference time without mentioning the event time. 'bn', however, while compatible with perfect contexts, can also co-occur

with past time adverbials which anchor the event to a point in time[29]. This observation weakens the possibility for 'bn' functioning as a perfect marker.

It is important to note that there exist languages which convey perfect meaning without a specific affix or construction, as, for instance, [have+past participle] constructions in English. Turkish is an example of the languages which do not have a specific affix or construction to mark perfect. Turkish does not have a syntactic perfect construction; rather the notion is expressed in the grammar semantically as suggested by Arslan-Kechriotis (2006) in her analysis of structures yielding perfect meaning like adverbials or question forms[30]. As seen in the sentence (160), the perfect meaning is derived from the combination of suffix -DI and negative polarity item 'hiç' in the question form.

Arslan-Kechriotis (2006), exs., (15) and (17):

(160) Hiç uçağ-a bin-di-n mi?
ever plane-DAT get on-DI-2SG Q
'Have you ever gotten onto a plane? / Have you ever travelled by plane?'

(161) Gözlük-ler-im-i kaybet-ti-m.
glasses-PL-POSS1SG-ACC lose-DI- 1SG
'I lost/have lost my glasses.'

Arslan-Kechriotis (2006) argues that the sentence in (161) is ambiguous between past tense reading, expressing a past action, and perfect reading, expressing a resulting state. This ambiguity can only be resolved through the context the sentence occurs in. At that point, another question is raised: Similar to Turkish, can it

[29] Note that the situation can be considered to resemble German perfect (as argued by Comrie, 1976), the structure in German is reported to denote past meaning despite its perfect structure, traditionally termed as the present perfect puzzle.

[30] In addition to the typically so-called past tense marker –DI, Turkish employs a variety of tools for expressing perfect meaning, such as the suffix –mIş and certain adverbials among others. However, I will follow the explanations and examples of -DI because it behaves like the nonmanual marker 'bn' in TİD. For further discussions, you can refer to Kelepir (2000) and Arslan-Kechriotis (2006).

be the case that it is not 'bn' but rather the whole structure in which it occurs which yields the desired reading: past or perfect? The nonmanual marker denotes that the event expressed by the predicate is perfective. This enables the inflected verb root to occur with the different contexts which convey the perfective reading, like past contexts or perfect contexts as seen in the following sentence (139).The case in Turkish supports my analysis for the nonmanual marker 'bn' which can similarly occur in both contexts. Hence, for instance, the sentence in (162) can convey either a present state of Zeynep or a past event.

___bn

(162) ZEYNEP ANKARA GO

'Zeynep has gone to Ankara. / Zeynep went to Ankara.'

In summary, these examples show that the event marked by 'bn' is perfective, yet not necessarily completive, and that the interpretation of past or perfect is derived from the combination of the perfective form marked with 'bn' and past time adverbials or context.

7.3 An attempt to explain 'bn' and sentential negation

I just entertain the idea that the aspectual function of 'bn' and its interaction with sentential negation and future time are related, yet to be able to make such a claim, empirical data and further study is required. Sign languages have been reported not to encode time information in the verbal domain. As shown in section 5.1.1, TİD also employs time adverbials to convey tense information in the sentential or discourse level. As for spoken languages that encode tense in the verbal domain in the literature, it is reported that the events in the past are considered definite (Binnick, 1991). However, sign languages do not mark every single event as a past, present or

future. Thus, they may have other markers to mark defineteness or existentiality in their systems like the ones which we have considered as aspectual markers. If they encode existentiality, these signs and sentential negation may compete for the same position in the composition. In other words, these markers have existential feature while the sentential negation also has existential and negation feature separately. The affirmative sentences which are inflected with these aspectual markers already have a marker encoding existentiality, therefore introducing another marker encoding existentiality, namely sentential negation creates the incompatibility. However, they require to take the one that has existential out of the computation and introduce another marker that have both existential and negation in one form, namely negative aspectual signs.

Additionally, future has also been argued as not to be tense, but a mood or modality notion which one can only make predictions about. Thus, if we stick to the idea that aspectual markers actually have existential, putting an existential event to an unpredicted time may create a semantic clash, so yields ungrammaticality. These may be the reasons behind the incompatibility of 'bn' with both sentential negation and future meaning. However, empirical data and further evidence is required to develop this idea.

CHAPTER 8

CONCLUSION

In this thesis, I have investigated how aspectual information is conveyed in TİD, especially perfective. The main focus of this study was to present the semantic difference between the aspectual markers BİT and 'bn' and their characteristic as perfective markers. The findings showed that these functional signs also have different syntactic positions. Based on these findings, I can propose the following:

(i) The nonmanual marker 'bn' is not the mouthing of the manual marker BİT. These two are distinct signs.

(ii) In contrast to what was proposed in Dikyuva (2011), the nonmanual marker 'bn' makes a distinction between states and events. It occurs with all event types except for cognitive state verbs. That is, it requires agentivity or causation.

(iii) 'bn' denotes that the event has reached its left boundary regardless of a change of state. It sees the event as a whole and can take scope over it.

(iv) The manual marker, BİT unlike 'bn' sees the internal structure of the event and agrees with the endpoint only if there is a change of state.

(v) BİT also requires a process alongside the endstate.

(vi) TİD syntax has two different Asp projections. One is higher AspP and corresponds to outer aspect. The other is lower AspP and corresponds to inner aspect.

(vii) The manual marker BİT is in the head of the lower AspP while the non-manual marker 'bn' is in the head of the upper AspP.

Consequently, this thesis proposed that there is a hierarchical organization between the signs, BİT and 'bn' by showing how aspectual information is conveyed in the verbal domain. I believe that further study on the other manual aspectual signs and nonmanuals as well as their interaction with each other, the incompatibility of these signs with sentential negation, the incompatibility of 'bn' with future time, and how future perfect is encoded will contribute to capturing the aspectual system and clause structure in TİD more comprehensively.

APPENDIX A

THE CONSULTANTS' RESPONSES TO THE TIME OF THE SENTENCES

Glosses of sentence	Intended meaning	Past	Present	Future	Cannot tell
PARTY IX-POSS1 FRIENDa aINVITE1	I invited my friends to the party.	1/7[31]	2/7	4/7	0/7
IX-POSS1 FRIENDa PARTY aINVITE1	I will invite my friends to the party.	0/7	1/7	6/7	0/7
PARTY IX-POSS1 FRIENDa aINVITE1 (BN)	I (have) invited my friends to the party.	2/7	1/7	4/7	0/7
IX1 CATa aTAKE1	I will take the cat.	0/7	3/7	4/7	0/7
BAZAAR FRUIT BUY	I bought fruit in the bazaar.	2/7	5/7	0/7	0/7
PARTY ONEa ONEb FRIEND aINVITE1 bINVITE1	I will invite my friends to the party one by one.	0/7	1/7	6/7	0/7
IX1 FRIENDa PARTY 1INVITEa (BN)	My friends (have) invited me to the party.	4/7	3/7	0/7	0/7
IX-POSS1 FRIENDa PARTY 1INVITEa	My friend will invite me to the party.	0/7	0/7	7/7	0/7
TOMORROW CATa aTAKE1	I will take the cat tomorrow.	0/7	0/7	7/7	0/7
DINNER FOR BREAD BUY	I am buying a bread for the dinner.	1/7	5/7	1/7	0/7
YESTERDAY BAZAAR FRUIT BUY	I bought fruit in the bazaar yesterday.	6/7	1/7	0/7	0/7
WORK FRIENDa aINVITE1	I invited my officemates.	4/7	1/7	1/7	1/7
FRIENDa PARTY aINVITE1 (BN)	I (have) invited my friend to the party.	5/7	1/7	1/7	0/7
MOTHERa 1CALLa (BN)	I (have) called my mother.	4/7	3/7	0/7	0/7

[31] In 1/7, 1 represents the number of consultants who report the tense of this sentence as past while 7 represents the number of all consultants participated in the study.

Glosses of sentence	Intended meaning	Past	Present	Future	Cannot tell
NEW WORKa 1APPLYa	I applied a new job.	2/7	4/7	1/7	0/7
YESTERDAY FRIENDa 1RUN-INTOa (BN)	I ran into my friend yesterday.	7/7	0/7	0/7	0/7
IX-POSS1 FRIENDa MANY aTEASE1	My friends are teasing me.	0/7	3/7	0/7	4/7
MOTHERa 1CALLa	I will call my mother.	0/7	0/7	7/7	0/7
A LITTLE WHILE AGO FRIENDa aTEASE1 (BN)	My friend teased me a little while ago.	5/7	2/7	0/7	0/7
FRIENDa 1RUN-INTOa (BN)	I (have) ran into my friend.	1/7	6/7	0/7	0/7
NEW WORK LOOK FOR, EVERY PLACE 1APPLYa	I am looking for a new job, I applied everywhere.	3/7	5/7	1/7	1/7
TODAY FRIENDa 1RUN-INTOa (BN)	I (have) ran into my friend today.	1/7	6/7	0/7	0/7
LAST^WEEK WORKa 1APPLYa (BN)	Last week, I applied a job.	7/7	0/7	0/7	0/7
YESTERDAY MOTHERa 1CALLa (BN)	Yesterday, I called my mother.	7/7	0/7	0/7	0/7
IX-POSS1 FRIENDa 1RUN-INTOa	I am running into my friend.	0/7	6/7	1/7	0/7
NEW JOBa 1APPLYa	I will apply a new job.	0/7	1/7	6/7	0/7
NEW JOB LOOK FOR EVERY PLACE 1APPLY	I am looking for a new job, I (have) applied everywhere.	3/7	3/7	3/7	0/7
1TELL2	I am telling you.	0/7	6/7	1/7	0/7
MOTHERa 1CALLa	I am calling my mother.	0/7	6/7	0/7	1/7
IX1 1TELL2(BN)	I (have) told you.	4/7	2/7	0/7	2/7
YESTERDAY IX1 1TELL2 (BN)	Yesterday, I told you.	7/7	0/7	0/7	0/7
NEW JOBa 1APPLYa (BN)	I (have) applied a new job.	4/7	3/7	0/7	0/7
IX1 IX2 1TELL2	I told you.	4/7	0/7	1/7	2/7

Glosses of sentence	Intended meaning	Past	Present	Future	Cannot tell
ROAD IX-POSS1 FRIENDa 1RUN-INTOa	I ran into my friend on the way.	3/7	5/7	0/7	0/7
IX-POSS1 FRIENDa aTEASE1 (BN)	My friends (have) teased me.	6/7	1/7	0/7	2/7
NEW JOB 1APPLYa 1APPLYb 1APPLYc	I applied many places for a new job.	4/7	3/7	1/7	0/7
IX-PL3 IX1 3TEASE1	They are teasing me.	0/7	6/7 (2 generic)	0/7	1/7
IX1 IX2 1TELL2	I will tell you.	0/7	0/7	7/7	0/7
IX1 IX2 1TELL2	I am telling you.	0/7	5/7	2/7	0/7
THREE WORK PLACE 1APPLYa (BN) 1APPLYb (BN)	I (have) applied three places for a job.	5/7	1/7	1/7	0/7
ROAD IX-POSS1 FRIENDa 1RUN-INTOa	I (always) run into my friend on the way.	0/7	6/7	1/7	0/7
FRIENDa aTEASE1 (BN)	My friend (has) teased me.	5/7	1/7	0/7	1/7
MOTHER SEARCH	My mother is searching.	0/7	7/7	0/7	0/7
NEW JOBa 1APPLYa	I applied a new job.	4/7	3/7	1/7	0/7
1TELL2	I will tell you.	0/7	1/7	7/7	0/7
IX-POSS1 FRIENDa 1RUN-INTOa	I ran into my friend.	1/7	4/7	2/7	0/7
NEW JOBa 1APPLYa (BN)	I (have) applied a new job.	4/7	2/7	1/7	0/7
MOTHERa 1CALLa	I will call my mother.	0/7	0/7	7/7	0/7
REMEMBER YESTERDAY ASSINGMENT 1GIVE FORGET	I have remembered that yesterday I forgot to give the assignment.	7/7 (4-both cl., 3 emb. cl.)	4/7	0/7	0/7
IXa TOYa IX-POSS1 DAUGHTER WANT	My daughter will want this toy.	0/7	6/7	1/7	0/7
YES IX1 TRY (BN)	Yes, I (have) tried.	2/7	4/7	1/7	0/7
IX NOW 1TELL2 LISTEN FORGET NOT	I am telling now, listen, don't forget	0/7	7/7 (6-both cl., 1 embd. cl.)	1/7 (embd. cl.)	0/7

Glosses of sentence	Intended meaning	Past	Present	Future	Cannot tell
NOW REMEMBER	Now, I have remembered.	0/7	7/7	0/7	0/7
IX NEW RECIPE TRY LET SEE HOW BE	I will try this new recipe let see how it will be.	0/7	0/7	7/7	0/7
IX2 WHERE IX-POSS1 MOTHER WORRY	Where are you? My mother worried.	1/7	6/7	0/7	0/7
IX1 1SAY2 IX2 FORGET	I said, you forgot.	4/7	3/7	0/7	1/7
IX1 RECIPE TRY (BN)	I (have) tried this recipe.	6/7	1/7	0/7	0/7
LET SEE IX1 RECIPE TRY IX2 LIKE	I tried this recipe, let see, will you like it?	2/7	0/7	5/7	1/7
IX2 WHERE IX-POSS1 MOTHER WORRY	Where are you? My mother is worrying.	0/7	6/7	1/7	0/7
MOVIE WATCH (BN) REMEMBER	I (have) watched the movie, I remember.	6/7	3/7	0/7	0/7
IX1 MOVIE WATCH REMEMBER	I watched this movie, I remember.	6/7	2/7	0/7	0/7
YESTERDAY REMEMBER ASSIGNMENT 1GIVE FORGET	I remembered yesterday that I forgot to give the assignment.	7/7	1/7	1/7 (forget)	0/7
IX-POSS1 DAUGHTER CHESS WANT	My daughter wants a chess.	0/7	5/7	2/7	0/7
RECIPE TRY HOW BE	I will try the recipe, how will it be?	0/7	0/7	6/7	1/7
IX1 1TELL2 IX2 FORGET	I told you, you forgot.	6/7 (1-tell)	1/7 (forget)	0/7	1/7
IX2 WHERE IX-POSS1 MOTHER WORRY	Where are you? My mother worried.	4/7	4/7	0/7	0/7
YESTERDAY IX-POSS1 SON TOY WANT	Yesterday, my son wanted a toy.	7/7	1/7	1/7	0/7
NOW REMEMBER ASSIGNMENT 1GIVE FORGET	Now, I have remembered that I forgot to give the assignment.	4/7 (forget)	6/7 (3-remember)	1/7 (forget)	0/7

Glosses of sentence	Intended meaning	Past	Present	Future	Cannot tell
NOW 1TELL2 LISTEN LATER FORGET NOT	I am telling now, listen don't forget later.	0/7	5/7 (3-tell)	5/7 (4-forget)	0/7
IX2 WHERE IX-POSS1 MOTHER WORRY	Where are you? My mother will worry.	0/7	5/7	2/7	0/7
IZMIRa TODAY aCOME	Today, she is coming from Izmir.	0/7	7/7	1/7	0/7
IX1 A^HOUR WALK	I will walk for an hour.	0/7	3/7	5/7	0/7
ISTANBULa GOa (BN)	He has gone to Istanbul. He went to Istanbul.	5/7	1/7	0/7	1/7
TOMORROW A^HOUR WALK SPORT DO NECESSARY	I will walk for an hour tomorrow, I should do sport.	0/7	3/7	5/7	0/7
A^HOUR WALK	I am walking for an hour.	3/7	4/7	0/7	0/7
ISTANBULa GOa	He will go to Istanbul.	0/7	0/7	7/7	0/7
IZMIRa YESTERDAY aCOME (BN)	She came from Izmir yesterday.	7/7	0/7	0/7	0/7
TWO^WEEK^AGO IZMIRa aCOME	She came from İzmir two weeks ago.	7/7	0/7	0/7	0/7
TWO^WEEK^LATER IZMIRa aCOME	She will come from Izmir two weeks later.	0/7	0/7	7/7	0/7
IX-POSS3 FATHER CIVIL SERVANT SO MOVEa MOVEb MOVEc	Her father is a civil servant so she always moves.	0/7	4/7	2/7	1/7
ISTANBULa GOa	He is going to Istanbul.	0/7	6/7	1/7	0/7
IX1 İSTANBULISTANBULa GOa	I went to Istanbul.	7/7	0/7	0/7	0/7
IX1 HOUSE WALK	I am walking to house.	1/7	6/7	0/7	0/7
YESTERDAY A^HOUR WALK (BN)	I walked for an hour yesterday.	7/7	0/7	0/7	0/7
IZMIRa aCOME	She will come from Izmir.	0/7	0/7	7/7	0/7
IX1 KADIKÖY MOVE	I will move Kadıköy.	0/7	2/7	7/7	0/7

Glosses of sentence	Intended meaning	Past	Present	Future	Cannot tell
YESTERDAY IZMIRa aCOME (BN)	She came from Izmir yesterday.	7/7	0/7	0/7	0/7
IZMIRa TODAY aCOME	She is coming from Izmir today.	0/7	5/7	2/7	0/7
IZMIRa aCOME	She came from Izmir.	3/7	4/7	0/7	0/7
TODAY IZMIRa aCOME	Today, she is coming from Izmir.	0/7	5/7	2/7	0/7
IX-POSS1 FATHER CIVIL SERVANT SO ALWAYS MOVEa MOVEb MOVEc	Her father is sivil cervant, so she always moves.	0/7	5/7	3/7	0/7
TRASH THROW	He threw the trash.	3/7	4/7	0/7	0/7
KADIKÖY MOVE	I moved Kadıköy.	4/7	2/7	1/7	0/7
IZMIRa aCOME	I came from Izmir.	4/7	3/7	0/7	0/7
YESTERDAY HOUSE WALK ACCIDENTa SEEa POLICEb 1CALLb	Yesterday, I was walking to the house, saw an accident called the police.	6/7	1/7	0/7	0/7
KADIKÖY MOVE (BN)	He (has) moved Kadıköy.	4/7	2/7	1/7	0/7

APPENDIX B

LIST OF MOUTHINGS IN TİD

Vowels	Consonants	Lips	Cheeks	Jaw/chin	Tongue	Theet	Position of mouth	Examples	Function	Source
uu		rounded						DAHA KÜÇÜK 'smaller'	comparative, diminutive, continuous	corpus
	bn/ap	straight			protruded		closed to open		perfective, perfect	Dikyuva (2011), Kubuş & Rathmann (2009)
ap			puffed either or only				open to close		negative of perfective, perfect	Makaroğlu & Dikyuva (2016)
ee		open, tense, pulling back the corners				gritted			inceptive	Dikyuva (2011)
					protruded to one side			ÖLMEK 'die', YAPAMAMAK 'cannot do'	lexical, negative of ability	Dikyuva (2011), Makaroğlu & Dikyuva (2016)

Vowels	Consonants	Lips	Cheeks	Jaw/chin	Tongue	Theet	Position of mouth	Examples	Function	Source
	ff							ÇOK SEVMEK 'to love very much'	continuous aspect, adverbial meaning	Corpus
	vv							ÇALIŞMAK 'to work'	continuous aspect	Corpus
oo		rounded						YO 'no', Relative clauses	negation, relative clause marker	Kubuş (2013)
Ii		open, tense		tense		gritted		HİÇ 'ever'	negation, negative polarity item	Makaroğlu & Dikyuva (2016)
ii		lower lip tense		tense		gritted		ÜZERE 'about to'	unrealized past event	
			puffing cheeks sequentially					İLGİSİZ 'indifferent'	lexical	
aa		open		like dropped						Dikyuva (2011)
Lele, open e		open			protruding tongue rapidly				continuous aspect	Dikyuva (2011)
Open e		open			protruding tongue slowly					Dikyuva (2011)

Vowels	Consonants	Lips	Cheeks	Jaw/chin	Tongue	Theet	Position of mouth	Examples	Function	Source
		open						DÖNÜP DURMAK 'couldn't sleep'	lexical	

APPENDIX C

MORE ON ASPECTUAL NEGATION

During grammaticality judgment sessions, some signers also provided the sentences with other manual signs YO 'no' as in (1) and HİÇ 'ever', as seen in (2) respectively. Both verbs in sentences in (1) and (2) have the nonmanual marker 'ap' it may not be clear in the stills. The consultants stated that YO can occur in specific contexts which negate a particular presupposition: YO is acceptable only if the signer thinks that the addressee has accused her. It is used as a corrective negation. Yet when my consultants were asked to negate sentences containing BİT and ‘bn’, they all used 'ap'.

(1) _____ap

APPLE^EAT IX$_1$ YO

"I did not eat the apple. / I have not eaten the apple."

(2) _____ap

IX$_1$ APPLE^EAT YO HİÇ 'ever'

"I have not ever eaten the apple."

Moving on to HİÇ 'ever', as seen in both (2) and Figure 1, it occurs after the verb inflected with 'ap'. Dikyuva et al. (2015) has reported it as a perfective negative marker (p. 264-5) and their examples do not have any other negative sign, namely either manual or nonmanual. However, some of my consultants did not accept HİÇ with affirmative sentences. That is, HİÇ seems to be a negative polarity item which is also proposed in Hakgüder (2014). As seen in (1), (2) and Figure 1, the nonmanual marker 'ap' accompanies HİÇ. The reason may be due to variation in regional signing. HİÇ does not negate the proposition on its own, yet it emphasizes the non-existence of the event 'give' in (3).

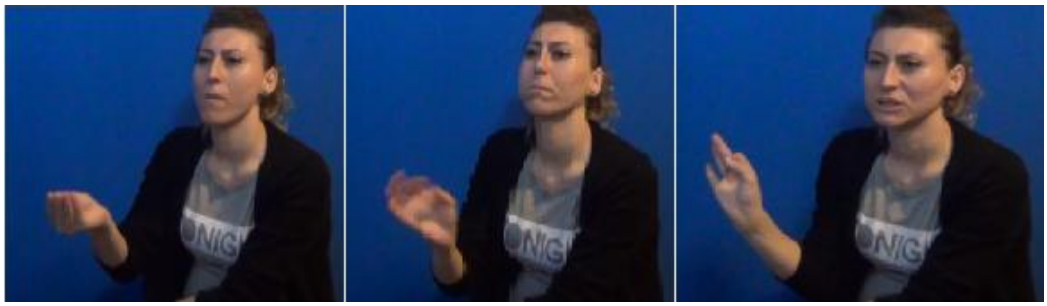
_____ap

(3) FOOD GIVE HİÇ

"I have not ever given the food."

_____ht

_____ap



GIVE HİÇ 'ever'

Figure1. The manual negative marker HİÇ 'ever'

(4) shows that HİÇ can also occur with sentential negation DEĞİL, which means that it is not the counterpart of BİT or 'bn'.

_____ht

_____hf

(4)

GÜL WORK HİÇ COME NOT

"Gül has not ever come to the office."

As shown above, YO cannot always be signed to negate the perfective sentence, since it is restricted to a very specific context. Additionally, HİÇ can occur with either perfective or non-perfective contexts as in (3) and (4) (cf. Dikyuva et al., 2015). Furthermore, it co-occurs with the nonmanual 'ap' as seen in Figure 1 The further study is needed to see whether TİD has two HİÇs: one is npi while the other is the negative counterpart of BİT.

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